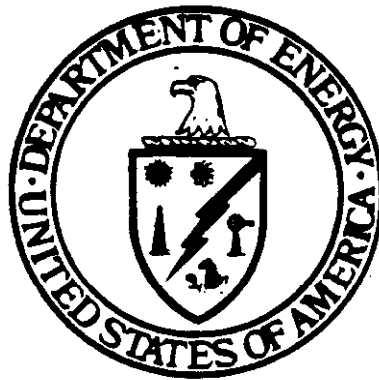


*Final PON 5*

DE-PS01-92FE62647

**SOLICITATION NUMBER**

CLEAN COAL TECHNOLOGY V



**DEPARTMENT OF ENERGY**  
**OFFICE OF MANAGEMENT SUPPORT**  
**HEADQUARTERS PROCUREMENT OPERATIONS**

**OPENING DATE:** JULY 6, 1992

**CLOSING DATE:** DECEMBER 7, 1992

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HEADQUARTERS PROCUREMENT OPERATIONS  
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WASHINGTON, D.C. 20585

ATTN: DOCUMENT CONTROL SPECIALIST

Offer in Response to RFP No. DE-PS01-92FE62647

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Opening Date: DECEMBER 7, 1992 Opening Time: 4:30



## Department of Energy

Washington, DC 20585

JUN 17 1992

### PROGRAM OPPORTUNITY NOTICE FOR CLEAN COAL TECHNOLOGY DEMONSTRATION PROJECTS

PON NUMBER DE-PS01-92FE62647

#### Prospective Proposers

The Clean Coal Technology (CCT) demonstration program is a \$5 billion national commitment, cost shared by the Government and the private sector, to demonstrate economic and environmentally sound methods for using coal, our Nation's most abundant energy resource. The program fosters the energy efficient use of the Nation's vast coal resource base. By doing this, the program contributes significantly to the long term energy security of the United States, furthers the Nation's objectives for a cleaner environment, and improves its competitive standing in the international energy market.

The first four solicitations in this program were issued in 1986, 1988, 1989, and 1991. This Program Opportunity Notice (PON) is in response to the CCT portion of Public Law Number 102-154, "An Act Making Appropriations for the Department of the Interior and Related Agencies for the Fiscal Year ending September 30, 1992, and for Other Purposes." Through this PON, the Department of Energy (DOE) is soliciting proposals to conduct cost-shared demonstration projects that advance significantly the efficiency and environmental performance of coal using technologies and that are applicable to either new or existing facilities.

On April 16, 1992, a draft PON was issued for public comment. The comments received were carefully reviewed by DOE and used in its preparation of the final PON. As a consequence, prospective proposers are advised that this final PON has undergone numerous changes compared to the draft PON.

The following is a summary of the salient elements of the PON. This letter, however, is not an integral part of the PON. In the event of any conflict between this letter and the enclosed PON, the information in the PON shall prevail.

All proposals must be submitted in accordance with the instructions in Sections 3 and 5. Each of the four proposal volumes must be bound separately. They must be received at the place designated in Section 3.5, "Time, Date, and Place Proposals are Due," no later than 4:30 p.m. local time, Washington, DC, on December 7, 1992.

A preproposal conference for this PON will be held at 10:00 a.m. on August 6, 1992, at the Departmental auditorium of the DOE, 1000 Independence Avenue, S.W., Washington, D.C.

Only proposals that can satisfy the qualification criteria and pass preliminary evaluation will be considered for comprehensive evaluation. Technical and cost and financial evaluation factors are provided in Section 4. The program policy factors applicable to this PON are also described in Section 4.

Depending on the evaluated potential of proposals submitted, as a result of this PON, one or more projects will be selected for negotiation leading to award.

This PON does not commit the Government to pay any costs incurred in connection with any proposal to procure or contract for any services, or to provide financial assistance to any proposer. The Government reserves the right, without limitation, to accept or reject any or all proposals regardless of the terms of the original proposal, and to request additional clarification of information. DOE, however, may select a proposal for negotiation without conducting discussions with the proposer. Proposers should refer to Section 6 of the PON for an explanation of the expected information needs of DOE in the post-selection/pre-award period.

All proposers are required to prepare and include in their proposals an abstract of the highlights of their proposed demonstration project that may be released to the public at any time. See Section 5.3.1.1, "Public Abstract."

Proposers are cautioned that certain proposal material submitted may become subject to disclosure to the public pursuant to the provisions of the Freedom of Information Act. See Section 3.27, "Proprietary Data or Confidential Business Information" for instructions on how to properly designate material that the proposal would like to be withheld from such disclosures.

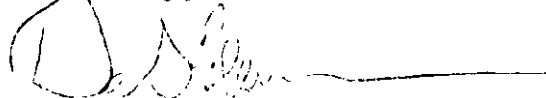
The designated Government representative for this PON is Mr. Herbert D. Watkins. All communications should cite the PON number and be directed to his attention at the address presented in Section 3.4, "DOE Issuing Office," or by telephone at (202) 586-1026.

Proposals must remain valid and be authorized for a period of acceptance of not less than 365 calendar days from the date specified for the receipt of proposals. Proposers are further cautioned that late proposals, modifications, and withdrawals will be treated in accordance with Section 3.34, "Late Proposals, Amendments of Proposals, and Withdrawals of Proposals."



Please complete and return the "Intention to Propose" form provided in Appendix B at the earliest practicable date. No other material should be returned if there is no intent to submit a proposal.

Sincerely,

A handwritten signature in dark ink, appearing to read 'D. G. Newman', followed by a horizontal line.

David G. Newman, Associate Director  
Headquarters Procurement Operations  
Office of Procurement, Assistance  
and Program Management

Enclosure

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- K. Cost Estimate and Financing Exhibits
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- N. Environmental Monitoring Plan Guidelines
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- P. Guidelines for Preparation of Project Management Plans

## 1. DEPARTMENT OBJECTIVE

### 1.1 INTRODUCTION AND BACKGROUND

On November 13, 1991, Public Law 102-154, "An Act Making Appropriations for the Department of the Interior and Related Agencies for the Fiscal Year Ending September 30, 1992, and for Other Purposes" (the "Act"), was signed into law. This Act, among other things, provides funds to DOE to conduct cost-shared Clean Coal Technology (CCT) projects for the design, construction, and operation of facilities that "...shall advance significantly the efficiency and environmental performance of coal-using technologies and be applicable to either new or existing facilities..."

The Act, together with Public Law 101-512, makes available a total of \$600 million for a fifth general request for Proposals under the Clean Coal Technology program (CCT V). Of these monies, \$7.2 million will be reprogrammed for the Small Business and Innovative Research Program and \$25.0 million will be set aside for Program Direction Funds for costs incurred by the Department of Energy (DOE) for implementation of the CCT V Program. All of the remaining appropriated funds, \$567.8 million, will be available for Award under this fifth round of the Clean Coal Technology Program. Pursuant to Public Law 102-154, unobligated balances of previous Clean Coal Technology appropriations may be applied to other procurements for use on Projects for which Cooperative Agreements are in place. Such unobligated balances, however, will not be available for initial Award for Projects in the fifth round.

The Act also directs DOE to issue a general request for Proposals for CCT V no later than July 6, 1992, and specifies that selection of Projects for negotiations shall take place "...not later than ten months after the issuance date of the fifth general request for proposals."

Further, Public Law 102-154 specifically addresses levels and forms of cost-sharing applicable to Projects proposed under this PON. Significantly, the Act provides that Budget Periods may be used in lieu of design, construction and operating phases for cost sharing calculations and that Project Specific Development Activities for process performance definition, component design

verification, materials selection, and evaluation of alternative designs may be funded up to a limit of ten percent of the Government's share of the Project cost. These are noteworthy changes from previous appropriations acts addressing the Clean Coal Technology Program. See Appendix A, "Congressional Guidance," and Section 7, "Government Financial Participation."

## 1.2 PON OBJECTIVE

The specific objective of this PON is to solicit Proposals to conduct cost shared Demonstration Projects that advance significantly the efficiency and environmental performance of coal using technologies and that are applicable to either new or existing facilities.

## 2. PROGRAM GUIDELINES

DOE is presenting the following guidelines to assist potential Proposers in determining whether a particular technology is eligible for financial assistance under the CCT V Solicitation. These guidelines explain some of the concepts used in the qualification and evaluation criteria presented in Section 4.

### 1. Technology Eligibility

CCT V is intended to demonstrate innovative technologies that utilize coal in an environmentally superior manner. It is not intended to support research activities nor to replicate coal utilization technologies that are commercially deployed in the United States.

Candidate technologies shall be suitable to either new or existing facilities. These technologies can have application to power generation, industrial uses, commercial/residential markets, transportation and generation of coal-derived fuels or chemicals.

Candidate technologies that utilize supplemental fuel other than coal (e.g., oil, natural gas, refuse) are not precluded under this PON. Such technologies, however, will not be credited with emission reductions for that portion solely attributable to fuel substitution.

### 2. DOE's Financial Role

The Act stipulates that DOE's share of total Project costs may not exceed 50 percent. DOE views its financial role as assisting private sector Projects. These Projects may be conducted by public sector participants (e.g., state or local governments and agencies) or may involve other public sector funding. Title to all real and personal property (other than Government-furnished property) acquired during the Demonstration Project shall vest in the Participant, consistent with the provisions of the Cooperative Agreement.

Further guidance on financial participation and the funding of cost overruns is contained in Section 7.



### 3. TERMS, CONDITIONS AND NOTICES TO PROPOSERS

#### 3.1 CONTENT OF RESULTING AGREEMENT

Any successfully completed negotiation concluded under this PON will result in a cost-shared financial assistance Award based on the Model Cooperative Agreement provided in Appendix L and a Repayment Agreement based on the Model Repayment Agreement provided in Appendix M.

#### 3.2 PROGRAM OPPORTUNITY NOTICE (PON) NUMBER

DE-PS01-92FE62647

#### 3.3 DATE OF PON ISSUANCE

July 6, 1992

#### 3.4 DOE ISSUING OFFICE

Department of Energy  
Office of Placement and Administration  
Operations Branch "B-1" (PR-322.1)  
Room Number 1J-059  
1000 Independence Avenue, S.W.  
Washington, D.C. 20585  
Point of Contact: Herbert D. Watkins (Procurement Member,  
Source Evaluation Board)  
Telephone: (202) 586-1026

### 3.5 TIME, DATE AND PLACE PROPOSALS ARE DUE

Proposals must be received at:

U.S. Department of Energy  
Headquarters Procurement Operations  
Room 1E-057  
Forrestal Building  
1000 Independence Avenue, S.W.  
Washington, D.C. 20585  
ATTN: Document Control Specialist (PR-33)

Proposals must be received NO LATER THAN 4:30 p.m., Washington, D.C. time, on December 7, 1992. (CAUTION: See Section 3.34, "Late Applications, Amendments of Applications, and Withdrawals of Applications.") This PON contains preprinted labels that should be used for mailing or hand delivering proposals.

### 3.6 AVAILABILITY OF FUNDS

The Government's share of any resulting Project costs is subject to the availability of funds appropriated under Pub. L. 101-512, and 102-154. These Acts provide that funds appropriated for this program will remain available until expended. Cost sharing by the Government, however, is contingent upon the continued availability of appropriated funds for this program. Funding to cover the Government's share of allowable costs will be provided on an incremental basis.

### 3.7 PROPOSAL ACCEPTANCE PERIOD

The minimum Proposal acceptance period must be 365 days after the deadline for receipt of Proposals, as stated in Section 3.5, "Time, Date, and Place Proposals Are Due."

### 3.8 NUMBER OF AWARDS

DOE anticipates that there will be multiple Awards resulting from this solicitation.

### 3.9 SOLICITATION DEFINITIONS

"Air Toxics" means hazardous air pollutants listed in the Clean Air Act.

"Award" means execution of a Cooperative Agreement between DOE and the Participant as a result of this PON.

"Awardee" means Participant.

"Budget" means the cost expenditure plan by phase submitted in the Proposal.

"Budget Period" means the interval of time between Project decision points into which the Project is divided for budgeting and funding purposes.

"Clean Air Act" means Clean Air Act Amendments, Public Law Number 101-549, 104 Stat 26 (codified as amended in scattered sections of 42 U.S.C.)

"Demonstration Facility" means the physical plant, equipment, and all other related facilities constructed and operated during the Demonstration Project. Those facilities that are operated in accomplishing Project Specific Development Activities are not considered part of the Demonstration Facility.

"Demonstration Project" or "Project" means the complete set of activities described in the Statement of Work of any resulting Cooperative Agreement.

"EHSS" means Environmental, Health, Safety and Socioeconomic.

"Financing Plan" means the information submitted by the Proposer that details the source and amount of funds required for the execution of the proposed Project.

"Greenhouse Gases" means gases in the atmosphere that absorb visible and infrared radiation.

"In-Kind Contribution" means the value of non-cash contribution provided by the Participant or third parties. Examples would be the value of facilities, equipment, or service to be used in the Demonstration Project.

"NEPA" means the National Environmental Policy Act (42 U.S.C. 4321 et seq.).

"Participant" means the legal entity that is responsible for all aspects of Project performance under the Cooperative Agreement.

"Phase" means the set of related tasks which taken together make up one of the three major categories of work under the Demonstration Project (design, construction, or operation).

"PON" means Program Opportunity Notice.

"Program Income" means the gross income earned directly from any Demonstration Project activity supported with DOE funds during Phases I, II, and III. Such income includes fees for services; fees or rental income for the use of real or personal property acquired with Project funds; and income from the sale of fuel, byproducts; or energy generated by the Demonstration Project. Such income does not include interest on DOE funds; rebates, credits, discounts, refunds, etc. and any interest earned on any of the foregoing; or income from royalties and license fees.

"Project" (see Demonstration Project).

"Project Definition Activities" means those tasks necessary to baseline the project as described further in Section 6-3.

"Project Specific Development Activities" means those development tasks undertaken at an existing facility, integral to the proposed Demonstration Project, which are eligible for cost sharing. Such eligible tasks are: process

performance definition; component design verification; materials selection; and evaluation of alternative designs. These tasks may include limited modifications to existing facilities to carry out Project related testing but shall not include any construction of new facilities.

"Project Specific Variable Operating Costs" means those variable operating costs that are only incurred as a direct result of the Demonstration Project when it is in operation and generating revenue.

"Project Team" means those organizations or parties responsible for proposing and accomplishing all phases of the Demonstration Project. The Project Team includes the prospective Participant, technology owners, and other third parties identified in this Proposal (excluding parties whose sole function is as a source of funds) who are essential to the successful completion of the proposed Demonstration Project. Where a legal entity has been or will be created to conduct the Project, DOE will consider the participating organizations or parties (partners, joint venture members, etc.) as Project Team members.

"Proposal" means the document submitted in response to this Solicitation.

"Proposer" means the organization signing the Proposal.

"Selection" means the determination by DOE for certain proposed Demonstration Projects to proceed into negotiations leading to an Award.

"Solicitation" means this Program Opportunity Notice DE-PS01-92FE62647.

"SOW" means Statement of Work.

"Submittal" means Proposal.

"United States" means The United States of America and its 50 states, the District of Columbia, the Commonwealth of Puerto Rico, and any possession or trust territory of the United States.

"WBS" means Work Breakdown Structure.

### 3.10 AN EQUAL RIGHTS NOTE

Wherever, in the PON or Cooperative Agreement, "man," "men," or their related pronouns may appear, either as words or as parts of words (and other than with obvious reference to named, male individuals), they are used for literary purposes and are meant in their generic sense (i.e., to include all humankind - both female and male sexes).

### 3.11 USE OF NON-FEDERAL EMPLOYEES AS ADVISORS

DOE may use several staff members of one or more National Laboratories as Technical Advisors to review environmental aspects of proposals submitted in response to the PON.

### 3.12 INTENTION TO PROPOSE

Please complete the "Intention to Propose" form in Appendix B of this PON and mail it to the address provided on the form by the earliest practicable date.

### 3.13 FALSE STATEMENTS

Proposals must provide full, accurate, and complete information as required by this PON (including all appendices and attachments). The penalties for making false statements in Proposals are prescribed in 18 U.S.C. 1001.

### 3.14 EXPENSES RELATED TO PROPOSER SUBMISSIONS

This PON does not commit the Government to pay any costs incurred in the preparation or submission of any Proposal. Such costs include those for studies, designs, or services necessary for the preparation of a Proposal.

### 3.15 AMENDMENTS TO THE PON

The only method by which any term of this PON may be modified is by an express, formal amendment to the PON generated by the DOE issuing office. No other communication made at any scheduled preproposal conference or during discussions,

whether oral or written, will modify or supersede the terms of this PON. Receipt of an amendment to the PON by a Proposer must be acknowledged (see Section 3.16, "Acknowledgment of Amendments to the PON").

### 3.16 ACKNOWLEDGMENT OF AMENDMENTS TO THE PON

Proposers shall acknowledge receipt of any amendment to this PON (a) by signing and returning the amendment, or (b) by letter or telegram. The Government must receive the acknowledgment before the time and date specified for receipt of Proposals.

### 3.17 PREPROPOSAL CONFERENCE

A Preproposal Conference for this PON will be held on August 6, 1992, at 10:00 a.m. local Washington, D. C. time in the U.S. Department of Energy Auditorium. The purpose is to provide an opportunity for prospective Proposers to gain a better understanding of the objectives and requirements of this PON. Questions concerning this PON should be submitted in writing to the Source Evaluation Board Procurement Member named in Section 3.4 and should be received no later than July 30, 1992. Seating will be available on a first come, first served basis.

The Preproposal Conference will be held at the following location:

U.S. Department of Energy  
Departmental Auditorium  
1000 Independence Avenue, S.W.  
Washington, DC 20585

### 3.18 NOTICE OF RIGHT TO REQUEST A PATENT WAIVER

Proposers that are not small businesses or nonprofit organizations have the right to request a waiver of all or any part of the rights of the United States in subject inventions. This request can be made in advance or within 30 days after the effective date of the Cooperative Agreement.

Small businesses and nonprofit organizations need not request a waiver. If the Participant is a small business or a nonprofit organization, the Patent Rights Clause provided in 10 C.f.R. § 600.33(b)(1), will be included in the Cooperative Agreement. This clause permits the recipient of financial assistance to retain title to subject inventions.

### 3.19 CLASSIFIED MATERIAL

Performance under the proposed Award is not expected to involve access to classified material.

### 3.20 RESPONSIBLE PROSPECTIVE PARTICIPANTS

- (a) The general and additional minimum standards for responsible prospective Participants set forth in 10 C.F.R. § 600.30 apply to this PON.
- (b) In accordance with 10 C.F.R. § 600.30, DOE reserves the right to conduct a preaward review of the Proposer's ability to manage and account for Federal funds, or of the Proposer's ability to comply with the requirements applicable to a CCT Financial Assistance Award.

### 3.21 DISCUSSIONS AND SITE VISITS WITH PROPOSERS

No written or oral discussions, or site visits are planned to be conducted with any of the Proposers prior to selection for Award. Thus, Proposers are cautioned to present their most favorable position in their Proposal. Although not planned, DOE reserves the right to conduct written or oral discussions, or site visits, with the Proposers. If any such discussions or visits are to be held, the Proposers will be notified of the date, time and place.

### 3.22 SELECTION NOTIFICATIONS

Written notice will be provided to both successful and unsuccessful Proposers after selection. Limited information about Projects which have been selected for negotiation will be made publicly available.



### 3.23 DISPOSITION OF PROPOSALS

Proposals will not be returned unless they are withdrawn in agreement with Section 3.34, "Late Proposals, Amendments of Proposals, and Withdrawals of Proposals."

### 3.24 DISPOSITION OF PON DOCUMENTS

Drawings, specifications, and other documents supplied by DOE with the PON may be retained by the Proposer, except documents that are required to be completed and returned as a part of the Proposal.

### 3.25 PROPOSALS SUBMITTED IN RESPONSE TO THE PREVIOUS CCT PROGRAM OPPORTUNITY NOTICES

This PON is not an extension or duplication of the previous Clean Coal Solicitations: DE-PS01-86FE60966 dated February 17, 1986, DE-PS01-88FE61530 dated February 22, 1988, DE-PS01-89FE61825 dated May 1, 1989, and DE-PS01-91FE62271 dated January 17, 1991. Proposals submitted in response to the earlier solicitations will not be evaluated or considered in any way with regard to this PON. Prospective Proposers must submit a new Proposal if they wish to be considered for financial assistance under this PON.

### 3.26 NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) STRATEGY

Consistent with the Council on Environmental Quality (CEQ) NEPA regulations (40 C.F.R. Parts 1500-1508) and the DOE requirements for compliance with NEPA (10 C.F.R. Part 1021, 57 FR 15122, April 24, 1992, an overall strategy for compliance with the National Environmental Policy Act of 1969 has been developed for the Clean Coal Technology Demonstration Program. This strategy includes the preparation of a Programmatic Environmental Impact Statement and project specific environmental reviews before Projects are selected, followed by site specific environmental impact analyses of each proposed Project after DOE selection.

No action taken by DOE with regard to any Proposal prior to the completion of the site-specific analysis, including Project selection or Award of a Cooperative

Agreement, shall be a final decision for purposes of compliance with NEPA (see Section 6.2).

#### 3.26.1 Programmatic Environmental Impact Statement

DOE has prepared a Programmatic Environmental Impact Statement (PEIS) for this and previous solicitations for the Clean Coal Technology Program. The direct action under consideration in the PEIS is the selection of one or more Projects to demonstrate Clean Coal Technologies. The indirect effect of this program is the expected widespread commercialization by the private sector of successfully demonstrated Clean Coal Technologies. The final PEIS (DOE/EIS-0146) was issued by DOE in November 1989.

#### 3.26.2 Pre-Selection Project-Specific Environmental Review

For Proposals that undergo comprehensive evaluation, DOE will prepare pre-selection project specific environmental reviews. Such reviews will summarize the strengths and weaknesses of each Proposal as compared with the environmental evaluation criteria (See Section 5.3.5), and will include, to the maximum extent possible, a discussion of alternative sites and processes reasonably available to the Proposer, a brief discussion of the environmental impacts of each Proposal, necessary mitigative measures and, to the extent known, a list of permits and licenses which must be obtained in implementing the Proposal. These confidential environmental reviews will be provided to the Source Selection Official for use in the selection process. In addition, DOE will document the consideration given to environmental factors in a publicly available selection statement. This selection statement will record that the relevant environmental consequences of reasonable alternatives have been evaluated in the selection process, and will be filed with the Environmental Protection Agency, in accordance with the DOE NEPA requirements.

#### 3.26.3 Post-Selection NEPA Review

Each Proposal submitted will contain a projected schedule for achieving NEPA compliance for the Project based on the expected level of NEPA documentation required and the full time required for its completion. Soon after selection,

Proposers will be requested to submit the environmental information specified in Appendix J, "Information Requirements for the National Environmental Policy Act." This detailed site- and project-specific information will be used as the basis for site-specific NEPA documents prepared by DOE for each selected Project. Such NEPA documents shall be prepared, considered, and published in full conformance with the requirements of the CEQ regulations, 10 C.F.R. Part 1021 and SEN-15-90. Proposers, at their own risk, may choose to begin preparation of the environmental information volume early so that Project delays can be avoided. See Section 7.2, "Allowable Preaward Costs for Cost Sharing."

#### 3.26.4 Post-Award Environmental Monitoring Review

In addition to the requirements discussed in Section 3.26.3, each Cooperative Agreement entered into will require an Environmental Monitoring Plan (EMP). Guidelines for development of the EMP, including requirements for monitoring hazardous air pollutants, are provided in Appendix N to the PON. The EMP will detail the collection and dissemination of significant technology-, project-, and site-specific environmental data. Besides the data required for compliance with applicable regulations and permits obtained from local, State, and other Federal agencies, there may be a need for additional monitoring to verify the performance of mitigative measures. The Proposer may also be required to prepare an action plan that outlines how the Proposer will implement, during the term of the Cooperative Agreement, commitments made in the site-specific NEPA documents for measures to mitigate expected environmental impacts of the Project. Annual reports may also be required by DOE regarding progress made in implementing the action plan and fulfilling the mitigation proposed. For convenience, the action plan, if required, and the EMP can be combined into one document, and environmental data on performance can be combined with the annual report submitted under the action plan required for NEPA compliance. Environmental data on performance of the technology also will be collected to provide a basis for assessing and mitigating the impacts of future commercialization of the technology. The environmental impacts of operation of the facility after completion of the Cooperative Agreement (including disposition of the facility) will be considered to the extent required by DOE's responsibilities under NEPA.

### 3.27 PROPRIETARY DATA OR CONFIDENTIAL BUSINESS INFORMATION

DOE may be required or authorized to withhold from public disclosure portions of the Proposal which contain trade secrets and privileged or confidential commercial or financial information, provided such portions of the Proposal have been identified as indicated in the following instructions.

The Proposer must identify each Proposal page (including each line or paragraph) containing data that the Proposer would like withheld from public disclosure. The cover sheet of the Proposal must contain the following notice:

#### NOTICE

The data contained on pages \_\_\_\_ of this Proposal have been submitted in confidence and contain trade secrets or privileged or confidential commercial and financial information and such data may be used or disclosed only for evaluation purposes provided that if a Cooperative Agreement is awarded to this Proposer as a result of or in connection with the submission of this Proposal, the Government shall have the right to use or disclose data herein to the extent provided in the Cooperative Agreement. This restriction does not limit the Government's right to use or disclose data obtained without restriction from any source, including the Proposer.

The Proposer must mark every sheet that contains data that it wishes to restrict with the following legend:

"Use or disclosure of the Proposal data in lines specifically identified by asterisk (\*) are subject to the restriction on the cover sheet of this Proposal."

If there is a request under the Freedom of Information Act (5 U.S.C. § 552) (FOIA) for any data contained in a Proposal, DOE's response to the request will be made by following procedures set forth in 10 C.F.R. § 1004.11 (1984). After receiving a FOIA request, DOE may ask the Proposer to explain why it believes the

requested information should be withheld. The Proposer's prompt cooperation will ensure that DOE is able to make a fully informed and justifiable decision on the FOIA request.

### 3.28 PREPARATION OF PROPOSALS

- (a) Proposers must examine the entire contents of this PON, including all instructions. The Proposer assumes the risk of failure to comply with the provisions of this PON.
- (b) Each Proposer shall furnish the information required by this PON.
- (c) The Proposal must be signed by a responsible official of the proposing organization authorized to contractually bind the organization to the performance of the Cooperative Agreement in its entirety.

### 3.29 PROPOSAL STRUCTURE

DOE expects that Proposals will conform to the PON provision entitled "Proposal Delivery Information" (Section 3.32) and will be prepared in accordance with the instructions provided below. To aid in evaluation, Proposals should be clearly and concisely written, as well as being neat, indexed (cross-indexed as appropriate), and logically assembled. The Proposal should be typed, double spaced, unreduced in size, on 8.5" by 11" paper. Illustrations should be legible. Foldouts should, in general, be held to 11" by 17" size. All pages of each part shall be appropriately numbered, and each part shall contain the name of the Proposer, the date, and the PON number. Each of the volumes shall employ the cover sheets as described below in Section 3.30. Each Proposal shall be in four volumes:

#### ORGANIZATION OF PROPOSAL VOLUMES

Volume I: Qualification Proposal; See Section 5.1,  
"Preparation of Qualification Proposal (Volume I)"

Volume II: Demonstration Project Proposal; See Section 5.3,  
"Preparation of Demonstration Project Proposal (Volume II)"

Volume III: Commercial Concept Proposal; See Section 5.4,  
"Preparation of Commercial Concept Proposal (Volume III)"

Volume IV: Cost and Finance Proposal; See Section 5.5,  
"Preparation of Cost and Finance Proposal (Volume IV)"

### 3.30 COVER SHEET INSTRUCTIONS

Appendix C of this PON provides four forms that shall be used for the preparation of the cover sheets for the four Volumes identified in Section 3.29. Proposers must complete the forms using the following instructions and then photocopy those four forms for use as (or on) the covers for all copies of each of the four Volumes.

Instructions for all four of the forms are provided below:

- (1) Copy Number. Each submittal shall be provided in one original and 14 copies. In this space, indicate the copy number of the particular Volume, using Number 1 for the original and Numbers 2 through 15 for the copies.
- (2) Technology. Identify the Clean Coal Technology(ies) employed in the Project.
- (3) Title. Provide the full title of the submittal. The title should reflect the substance of the proposed Project.
- (4) Name(s). Identify the name(s) of the Proposer(s), listing the proposed Participant first (see Section 3.9, "Solicitation Definitions").

- (5) Proprietary Information. See Section 3.27, "Proprietary Data or Confidential Business Information".

### 3.31 PROPOSAL PACKAGING

Each of the Proposal volumes shall be physically separate and entitled as listed below. Fifteen (15) copies are required of each Proposal volume (original, to be identified as "Copy 1," plus fourteen (14) copies, to be identified as "Copies 2 through 15"). The required packaging and grouping are:

- o Group 1: Copy 1 of Volume I, Qualification Proposal,  
+ Copy 1 of Volume II, Demonstration Project Proposal,  
+ Copy 1 of Volume III, Commercial Concept Proposal,  
+ Copy 1 of Volume IV, Cost and Finance Proposal,  
+ One Unbound Copy of the Public Abstract  
(Section 5.3.1.1),  
+ One Unbound Copy of the Project Summary Form  
(Section 5.3.1.2).
- o Group 2: Copies 2 through 15 of Volume I,  
Qualification Proposal.
- o Group 3: Copies 2 through 15 of Volume II,  
Demonstration Project Proposal.
- o Group 4: Copies 2 through 15 of Volume III,  
Commercial Concept Proposal.
- o Group 5: Copies 2 through 15 of Volume IV,  
Cost and Finance Proposal.

Note: All documents that contain original signatures must be in Package 1.

Each group shown above must be packaged individually. This does not prevent assembling more than one, or all, of the groups in a single package. Mark the group number on the outside of each package. Delivery labels are included inside the front cover of this document.

### 3.32 PROPOSAL DELIVERY INFORMATION

#### (a) Signed Originals

Group No. 1 of the Proposal, as explained in Section 3.31, "Proposal Packaging," shall contain the signed originals of all documents requiring signature by the Proposer. Subsequent copies of the Proposal may use reproductions of the signed originals.

#### (b) Proposal Delivery

The Proposer assumes full responsibility for ensuring that DOE receives the Proposal by the date and time specified in Section 3.5, "Time, Date, and Place Proposals are Due." All packages must be closed and sealed for delivery as if by delivery by the U.S. mail. See also Section 3.34, "Late Proposals, Amendments of Proposals, and Withdrawals of Proposals."

#### (c) Labels

The labels which immediately follow the PON cover page should be used when submitting the Proposal and amendments thereto. The Proposer should include a return address on each package. Note that one label should be used if the Proposal is hand-delivered and a different label should be used if the Proposal is mailed.

#### (d) Facsimile or Telegraphic Proposals or Modifications

Facsimile Proposals or modifications will not be allowed. Telegraphic Proposals will also not be allowed. Proposals may be modified, however, by written or telegraphic notice, if received by the time specified for receipt of Proposals.

### 3.33 UNNECESSARILY ELABORATE PROPOSALS

Unnecessarily elaborate Proposals or other presentations are not desired. They may be construed as a sign of the Proposer's lack of cost consciousness.



Elaborate art work, expensive paper and bindings, and expensive visual and other presentation aids are neither necessary nor desired.

### 3.34 LATE PROPOSALS, AMENDMENTS OF PROPOSALS, AND WITHDRAWALS OF PROPOSALS

- (a) Any Proposal received at the office designated in the solicitation after the exact time specified for receipt will not be considered unless it is received before Award is made and it--
  - (1) Was sent by registered or certified mail not later than the fifth calendar day before the date specified for receipt of offers (e.g., and offer submitted in response to a solicitation requiring receipt of offers by the 20th of the month must have been mailed by the 15th);
  - (2) Was sent by mail or, if authorized by the solicitation, was sent by telegram or via facsimile and it is determined by the Government that the late receipt was due solely to mishandling by the Government after receipt at the Government installation;
  - (3) Was sent by U.S. Postal Service Express Mail Next Day Service-Post Office to Addressee, not later than 5:00 p.m. at the place of mailing two working days prior to the date specified for receipt of Proposals. The term working days excludes weekends and U.S. Federal holidays; or
  - (4) Is the only Proposal received.
- (b) The only acceptable evidence to establish the date of mailing of a late Proposal or modification sent either by U.S. Postal Service registered or certified mail is the U.S. or Canadian Postal Service postmark both on the envelope or wrapper and on the original receipt from the U.S. or Canadian Postal Service. Both postmarks must show a legible date or the Proposal, quotation, or modification shall be processed as if mailed late. Postmark means a printed, stamped, or otherwise placed impression (exclusive of a postage meter machine impression) that is readily

identifiable without further action as having been supplied and affixed by employees of the U.S. or Canadian Postal Service on the date of mailing. Therefore, offerors or quoters should request the postal clerk to place a legible hand cancellation bull's eye postmark on both the receipt and the envelope or wrapper.

- (c) The only acceptable evidence to establish the time of receipt at the Government installation is the time/date stamp of that installation on the Proposal wrapper or other documentary evidence of receipt maintained by the installation.
- (d) The only acceptable evidence to establish the date of mailing of a late offer, modification, or withdrawal sent by Express Mail Next Day Service-Post Office to Addressee is the date entered by the post office receiving clerk on the Express Mail Next day Service-Post Office to Addressee label and the postmark on both the envelope or wrapper and on the original receipt from the U.S. Postal Service. Postmark has the same meaning as defined in paragraph (d) of this provision, excluding postmarks of the Canadian Postal Service. Therefore, offerors or quoters should request the postal clerk to place a legible hand cancellation bull's eye postmark on both the receipt and the envelope or wrapper.
- (e) Notwithstanding paragraph (a) of this provision, a late modification of an otherwise successful Proposal that makes its terms more favorable to the Government will be considered at any time it is received and may be accepted.
- (f) Proposals may be withdrawn by written notice or telegram (including mailgram) received at any time before Award. If the solicitation authorizes facsimile Proposals, Proposals may be withdrawn via facsimile received at any time before Award, subject to the conditions specified in the provision entitled Facsimile Proposals. Proposals may be withdrawn in person by an offeror or an authorized representative, if the representative's identity is made known and the representative signs a receipt for the Proposal before Award.

### 3.35 EXPLANATION TO PROSPECTIVE PROPOSERS

A prospective Proposer who would like an explanation or interpretation of this PON must submit a written request to the Source Evaluation Board Procurement Member. Allow enough time for the reply to reach all prospective Proposers before the submission of their Proposals. To be sure that requests for explanation or interpretation will be considered, the requests must be received by the Source Evaluation Board Procurement Member by 4:30 p.m., Washington, D.C., time, on November 13, 1992. Oral explanations or instructions provided before selection are not binding. Any information given to a prospective Proposer about this PON will be furnished promptly to all other prospective Proposers, if that information is necessary in submitting Proposals or if the lack of it would be prejudicial to any other prospective Proposers.

### 3.36 FAILURE TO SUBMIT PROPOSAL

Recipients of this PON who choose not to submit a Proposal should not return this PON. They should indicate, however, by letter or postcard to the Source Evaluation Board Procurement Member whether they want to receive future solicitations for similar financial assistance opportunities. If a recipient does not submit a Proposal and does not say if future solicitations are desired, the recipient's name may be removed from the applicable mailing list. Accordingly, it is essential that recipients complete and return the "Intention to Propose" form provided in Appendix B.

### 3.37 SELECTION OF PROPOSALS

- (a) The Government intends to make Awards of financial assistance through cost shared Cooperative Agreements. An Award will be negotiated with those whose Proposals are selected following consideration of the evaluation criteria and program policy factors.
- (b) The Government may (1) reject any or all Proposals, (2) select for negotiation any Proposal, in whole or in part, and (3) waive informalities and minor irregularities in Proposals received.

- (c) The Government may select Proposals for negotiation based on the initial Proposals received, without discussions with the Proposers. Therefore, each initial Proposal should contain the Proposer's best possible terms from technical, cost, and business and management standpoints.
- (d) Unless a written notice withdrawing the Proposal has been received, the Government may select a Proposal for negotiations and may make an Award of financial assistance during the Proposal acceptance period (see Section 3.7).

### 3.38 FUNDS TRANSFER

Payments by DOE to the Participant under any Financial Assistance Award will be in accordance with U.S. Department of Treasury regulations.

### 3.39 RIGHTS IN TECHNICAL DATA

The Cooperative Agreement which will be negotiated with successful Proposers will present DOE's known requirements for technical data. The Additional Technical Data Requirements clause (see Appendix L, "Model Cooperative Agreement") provides the Government with the option to order additional technical data, the requirements for which are not known at the time of Award. There is, however, a built-in limitation on the kinds of technical data that may be required. This limitation clause provides that the Participant may withhold delivery of proprietary data. This withholding of proprietary data is the primary means by which the Participant may protect its proprietary position. There are, however, two situations where the Government may need to have limited access to a Participant's proprietary data.

First, paragraph (f) of the Rights in Technical Data clause (see Appendix L, "Model Cooperative Agreement") gives the Contracting Officer's representatives the limited right to inspect, at the Participant's facility, the Participant's proprietary data which were withheld from delivery. This inspection is needed to verify that such data were properly withheld or to evaluate work performance.

Second, paragraph (g) of the Rights in Technical Data clause provides the Government the right to require the Participant to furnish, with limited rights, proprietary data previously withheld. In this case, the limited rights in proprietary data and the Government's obligation for limited use and disclosure of such data provide the means by which the Participant protects its proprietary position. Paragraph (g) will be used where, for programmatic reasons, there is a need for the delivery of proprietary data to the Government. To help in making this programmatic determination, the Proposal must state that the work to be performed and the known requirements for technical data as presented in this PON have been reviewed by the Proposer. Furthermore, as discussed in Section 5.3, the Proposer must exercise one of two options. First, it may state that no data will be withheld. Second, the Proposer may submit a list identifying the proprietary data that, to the best of the Proposer's knowledge, likely will be used, acquired, or otherwise obtained during Project performance and will be withheld.

Paragraph (c)(3) of the Rights in Technical Data clause, regarding licensing of copyrighted material, paragraph (h), Participant Licensing, and paragraph (j), Commercialization of Technology, shall not normally be included where the Participant is a small business firm or nonprofit organization. In such cases, however, DOE may require the Participant to obtain sufficient obligations from the third parties to ensure commercialization of the demonstrated technology. For Participants other than small business firms or nonprofit organizations, paragraph (h), modified as necessary by programmatic needs, will be included, and paragraphs (j) and (c)(3) may be included, as determined by programmatic needs to ensure commercialization of the demonstrated technology. Paragraph (i), Availability of Contract and Other Data, will normally be included to provide the Government with rights in data in the event of Participant or Government withdrawal. Paragraph (i), however, may be modified as necessary for the programmatic needs for a particular Project. Similarly, paragraph (n) of the "Patent Rights" clause ("Facility Patent License") may be modified as necessary in accordance with programmatic needs.

Attention is invited to the data provision authorized by Pub. L. 102-154 that allows DOE to provide, in a Clean Coal Technology Project Cooperative Agreement, appropriate protection against the public dissemination of information that

results from the demonstration activities. This protection is authorized for information that would be a trade secret or commercial or financial information that is privileged or confidential if the information had been obtained from and first produced by a non-Federal party participating in a Clean Coal Technology Project. This protection against public dissemination of such information is authorized for a period of up to five years after completion of the operations phase of a Demonstration Project. The exercise of this authority will not be interpreted by the Department as a substitute for existing authority to grant advance patent waivers or to protect from public disclosure proprietary information.

However, in order to meet programmatic requirements of the Clean Coal Technology Program, some technical data needs to be made available to the public without restriction. It is expected that a Cooperative Agreement will include express provisions assuring the public availability of certain data. However, proprietary data will not be made publicly available.

The period for protection against public dissemination of information resulting from demonstration activities will be negotiable (up to five years after completion of the operations phase) depending on the subject matter and nature of the Cooperative Agreement and the extent to which a Participant expressly agrees in the Cooperative Agreement to have appropriate types of data publicly available.

#### 3.40 REPORTS TO CONGRESS

After selection, DOE will prepare and submit to Congress the following reports:

- (1) A comprehensive report on the Proposals received and
- (2) A full and comprehensive report on each Project selected. This report will be submitted to Congress at least 30 calendar days before the planned execution of any Cooperative Agreement. The report will include the facts and circumstances relied upon in support of the proposed Project. Each report will include an analysis describing the environmental impacts that

may be produced from the projected commercial application of the generic technology representing the Proposer's technology.

### 3.41 CERTIFICATIONS

Complete the certifications in Appendix H, ASSURANCES - NON-CONSTRUCTION PROGRAMS; CERTIFICATION REGARDING DRUG-FREE WORKPLACE REQUIREMENTS; CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS PRIMARY COVERED TRANSACTIONS; and DISCLOSURE OF LOBBYING ACTIVITIES. Include these certifications in Volume IV of the Proposal.

#### 4. EVALUATION CRITERIA AND PROGRAM POLICY FACTORS

##### 4.1 INTRODUCTION

The prime consideration in the evaluation of Proposals for financial assistance is to assess their merit in order to determine those Proposals that offer the greatest likelihood of successfully demonstrating and subsequently commercializing emerging Clean Coal Technologies. The process of evaluation will consist of:

- (a) Qualification,
- (b) Preliminary Evaluation,
- (c) Comprehensive Evaluation,
- (d) Consideration of Program Policy Factors, and
- (e) Application of Other Considerations.

The Source Selection Official will select Proposal(s) for negotiations leading to Award by taking into account the evaluation criteria, relevant program policy factors and other considerations (as discussed in Section 4.6) in order to determine the mix of Projects that will best further the objectives and goals of this PON.

##### 4.2 QUALIFICATION

In order to be considered in the Preliminary Evaluation phase, a Proposal must successfully pass Qualification. Failure to meet one or more of the Qualification Criteria will result in rejection of the Proposal. In the event that a Proposal is rejected, a notice will be sent to the Proposer stating the reason(s) that the Proposal will not be considered for financial assistance under this solicitation.



The Proposal must meet the following Qualification Criteria:

- (a) The proposed Demonstration Facility must be located in the United States.
- (b) The proposed Demonstration Facility must be designed for and operated with coal. These coals must be from mines located in the United States.
- (c) The Proposer must agree to provide a cost share of at least 50 percent of total allowable Project cost, with at least 50 percent in each of the Budget Periods.
- (d) The Proposer must have access to, and use of, the proposed site of the Demonstration Facility and any proposed alternate site for the duration of the Demonstration Project.
- (e) The proposed Project Team must be identified and firmly committed to fulfilling its proposed role in the Project.
- (f) The Proposer agrees that, if selected, it will submit a "Repayment Agreement" consistent with Section 7.7.
- (g) The Proposal must be signed by a responsible official of the proposing organization authorized to contractually bind the organization to the performance of the Cooperative Agreement in its entirety.

#### 4.3 PRELIMINARY EVALUATION

In order to be considered in the Comprehensive Evaluation phase, a Proposal must successfully pass Preliminary Evaluation. Failure to meet one or more of the Preliminary Evaluation requirements will result in rejection of the Proposal. In the event that a Proposal is rejected, a notice will be sent to the Proposer stating the reason(s) that the Proposal will not be considered for financial

assistance under this solicitation. The requirements of the Preliminary Evaluation are as follows:

- (a) The Proposal must be consistent with the objective of this PON, as stated in Section 1.2.
- (b) The Proposal (Volumes II, III, and IV) must contain sufficient finance, management, technical, cost, and other information to enable Comprehensive Evaluation as described in the solicitation. The Proposal must include an explicit financing plan for the Project.

#### 4.4 COMPREHENSIVE EVALUATION

Proposers passing Preliminary Evaluation will have their Demonstration Project Proposal (Volume II), Commercial Concept Proposal (Volume III), and Cost and Finance Proposal (Volume IV) evaluated. This comprehensive evaluation will be performed against the criteria listed in this section. These criteria are divided into two categories.

The Technical Evaluation is conducted to determine the merits of the Proposal with regard to the potential for success of both the Demonstration Project itself as well as the future commercial application of the demonstrated technology. As a result, the Technical Evaluation Criteria are further classified into Demonstration Project Factors and Commercialization Factors. The evaluation in this category results in a numerical score for each Proposal against each of the Technical Evaluation Criteria.

The Cost and Finance Evaluation is conducted to determine the reasonableness of the cost estimate for completing the SOW. This Evaluation will also verify the capability and commitment to finance the Demonstration Project. The Evaluation in this category will result in a numerical score for each Proposal against each of the Cost and Finance Criteria.

#### 4.4.1 Technical Evaluation Criteria

The Technical Evaluation Criteria are divided into two major categories. The Demonstration Project Factors deal with the proposed Demonstration Project itself. The criteria in this category assess the technical and environmental merit of the Project and the technical and management approaches to execute the Project.

Commercialization Factors address the projected commercial applications for the demonstrated technology. The criteria in this category assess the potential of the proposed technology to significantly improve environmental performance and efficiency in new or existing facilities and to achieve wide commercial acceptance. The criteria assess the cost effectiveness of the proposed technology against existing technologies.

##### 4.4.1.1 Demonstration Project Factors

###### (a) Technical Readiness

Technical readiness for demonstration at the size proposed, as evidenced by the adequacy, availability, suitability, and quality of the data and analyses that support a decision to advance to demonstration scale.

###### (b) Adequacy, Appropriateness, and Relevance of Demonstration

Adequacy, appropriateness, and relevance of the proposed Project to advance the development of the proposed technology to commercial status and provide new information to enable the private sector to make rational commercial decisions concerning utilization of the proposed technology.

###### (c) Environmental, Health, Safety, Socioeconomic, and other Site-Related Aspects

Adequacy and appropriateness of proposed approaches for meeting or exceeding all EHSS requirements and minimizing potentially adverse EHSS impacts of the proposed Demonstration Project. The suitability, quality,

and adequacy of the site(s) and/or facility(ies) for the proposed Demonstration Project.

(d) Technical and Management Approaches

Reasonableness and adequacy of the technical approach to the proposed Demonstration Project. Degree to which all aspects of the Project are addressed, including design, construction, operation and disposition of the Demonstration Facility. Quality and completeness of the management approach to the proposed Demonstration Project. Commitment by the Proposer and each Project Team member to make available the personnel as well as other resources necessary to execute the Demonstration Project.

4.4.1.2 Commercialization Factors

(a) Environmental Performance

The extent to which the proposed technology enables the continued and increased use of coal for conversion to useful energy forms in new or existing facilities by improving control of noxious emissions associated with its use, including sulfur dioxide, the oxides of nitrogen, and air toxics. Extent to which control levels exceed those of technologies commercially practiced in the United States. The degree to which the proposed technology minimizes the amount and adverse environmental impacts of solid and liquid waste.

(b) Energy Efficiency

The extent to which the proposed technology, applied alone or as part of a larger process, converts coal to electricity or other useful products or provides a useful service with higher efficiency than existing technology commercially practiced in the United States.

(c) Cost Performance

The extent to which the proposed technology, applied alone or as part of a larger process, converts coal to electricity or other useful products or provides a useful service at competitive cost in commercial applications.

(d) Commercialization Potential

The potential of the proposed technology, following its successful demonstration, for widespread commercial deployment. Adequacy of the proposed marketing plan to bring the technology from demonstration to full realization of its commercial potential. The capability and commitment of the proposed Project Team to commercialize the technology demonstrated in this Project.

4.4.2 Cost and Finance Evaluation Criteria

(a) Reasonableness of Cost Estimate

The extent to which the cost estimate is reasonable and adequate for completing the SOW activities for all Budget Periods of the Demonstration Project.

(b) Funding of the First Budget Period

Financial condition, capability, and firmness of the commitment of the proposed funding sources to provide their respective share of the non-DOE portion of the first Budget Period. Adequacy of plans in the event that Project costs increase.

(c) Funding of the Remaining Budget Periods

Adequacy and completeness of the plan to fund the remaining Budget Periods for accomplishing the SOW activities for the Project. Financial condition and capability of the proposed financing sources to commit the non-DOE share of the Project costs. Ability to demonstrate that market agreements

can be obtained to provide the Program Income (if applicable) for financing the Project. Adequacy of plans in the event that Project costs increase.

(d) Project Team Commitment

Extent of Project Team commitment to the Demonstration Project and subsequent commercialization of the technology.

#### 4.4.3 Relative Importance of Criteria

The Technical Evaluation Criteria are three times as important as the Cost and Finance Evaluation Criteria.

Within the Technical Evaluation, each criterion will have the following weight:

Demonstration Project Factors

Technical Readiness	20%
Adequacy, Appropriateness, and Relevance of the Demonstration	15%
EHSS and other Site-Related Aspects	5%
Technical and Management Approaches	<u>10%</u>
SUBTOTAL - Demonstration Project Factors	50%

Commercialization Factors

Environmental Performance	15%
Energy Efficiency	15%
Cost Performance	10%
Commercialization Potential	<u>10%</u>
SUBTOTAL - Commercialization Factors	<u>50%</u>
TOTAL	100%

Within the Cost and Finance Evaluation, each criterion will have the following weight:

Reasonableness of the Cost Estimate	15%
Funding of the First Budget Period	35%
Funding of the Remaining Budget Periods	40%
Project Team Commitment	<u>10%</u>
TOTAL	100%

#### 4.4.4 Guide for Proposal Evaluation

DOE presents Table 4-1 as an aid to Proposers in determining where to display information within the Proposal. The criteria that DOE will use to evaluate Proposals are listed in the left hand column. The Proposal section (described in Section 5.2 of this PON) in which the information should be presented is displayed across the top.

The marks within each box represent whether DOE considers the section to be the primary (P) or secondary (s) source of information to use in its determinations. In the case of the Commercialization Potential, for example, Section III A will be important, but the primary source of information for the DOE evaluation will be Section III E.

DOE reserves the right to use any portion of a Proposal in its evaluation.

TABLE 4-1  
Guide for Proposal Evaluation

PROPOSAL SECTION CRITERIA	II						III					IV			
	A	B	C	D	E	F	A	B	C	D	E	A	B	C	D
<u>Demonstration</u>															
(a) Tech Readiness		s	P												
(b) Adequacy		s	P												
(c) EHSS				P	P										
(d) Approach			s			P									
<u>Commercialization</u>															
(a) Env. Perform.							s	P							
(b) Energy Effic.							s		P						
(c) Cost Perform.							s			P					
(d) Comm'l Potent.							s				P				
<u>Cost &amp; Finance</u>															
(a) Cost Estimate												P			
(b) 1st Bud. Per.													P		
(c) Remain. B. P.														P	
(d) Commitment											P		s	s	P

#### 4.5 PROGRAM POLICY FACTORS

Program Policy Factors are factors which the Source Selection Official may use to select a range of Projects that would give the best value to the Government and that would best serve program objectives. In the following factors, the word "collectively" is meant to include Projects selected in this solicitation and prior Clean Coal solicitations, as well as, other ongoing demonstrations in the United States. The following Program Policy Factors shall be considered:

- (a) The desirability of selecting Projects that collectively represent a diversity of methods, technical approaches, and applications.



- (b) The desirability of selecting Projects that collectively utilize a broad range of U.S. coals and are in locations which represent a diversity of EHSS, geographic, and climatic conditions.

#### 4.6 OTHER CONSIDERATIONS

In the Project selection process, DOE will consider giving preference to Projects located in States for which the rate-making bodies of those States treat the Clean Coal Technologies the same as pollution control Projects or technologies. The inclusion of this Project selection consideration is intended to encourage States to utilize their authorities to promote the adoption of Clean Coal Technology Projects as a means of improving the management of air quality within their areas and across broader geographical areas. Recognizing the benefits of pollution control to society, some States offer utilities more favorable rate treatment for pollution control equipment than for other utility investments. States which offer such incentives to Clean Coal Technologies may also serve to offset a portion of the additional risk inherent in demonstrations of new technologies.

The term "will consider giving preference" means that the Source Selection Official will use this consideration as a tie breaker if, after application of the Evaluation Criteria and the Program Policy Factors, two Projects receive identical evaluation scores and remain essentially equal in value. This consideration will not be applied if, in doing so, the regional geographic distribution of the Projects selected would be altered significantly.

Since DOE recognizes that actions pending by a ratemaking body take time to implement, a State will be considered to be treating Clean Coal Technologies the same as pollution control Projects or technologies if the State regulatory body has taken action that indicates that the ratemaking body intends to implement such a policy prior to DOE's funding of any affected Project.

## 5. PROPOSAL PREPARATION INSTRUCTIONS

### 5.1 PREPARATION OF QUALIFICATION PROPOSAL (VOLUME I)

The preparation of this Volume is very important. If the Proposal does not meet the requirements identified in Section 4.2, "Qualification," the Proposal shall not undergo Preliminary and Comprehensive evaluation. The Proposer must address each of the Qualification Criteria listed in Section 4.2 and show how the Proposal meets those criteria. The discussion should be sufficient unto itself for a determination of whether the Proposal meets the Qualification Criteria. DOE has no obligation to refer to other volumes if the discussion provided in Volume I does not show that the Qualification Criteria have been met. For those criteria that require the completion of the certification forms provided in Appendices D and G, these forms must be submitted in this Volume. Such certifications must be completed and signed by an individual with authority to bind the proposing organization. The information required to satisfy the Qualification Criteria is shown below:

#### (a) LOCATION OF DEMONSTRATION FACILITY

The proposed Demonstration Facility must be located in the United States.

The Proposer must identify the proposed location and show that it is within the United States. Information provided must include the State, county, and municipality (if applicable) in which the Demonstration Facility will be located. Information must be provided for each site and any alternative site in the Proposal.

#### (b) USE OF UNITED STATES COAL

The proposed Demonstration Facility must be designed for and operated with coal. These coals must be from mines located in the United States.

The Proposer must provide a description of the type and source of coal sufficient to verify that the coal will be mined in the United States.

(c) COST SHARING

The Proposer must agree to provide a cost share of at least 50 percent of the total Project cost, with at least 50 percent in each Budget Period.

The Proposer must complete the Certification Form contained in Appendix D and include it in Volume I of the Proposal. Signing this form will confirm that the Proposer is aware that the Government's cost share will not exceed 50 percent in any of the Budget Periods.

(d) DEMONSTRATION FACILITY SITE AVAILABILITY

The Proposer must have access to, and use of, the proposed Demonstration Facility site and any proposed alternative site for the duration of the Project.

The Proposer must document its access and right of use to the site of the Demonstration Facility. This documentation should include evidence of the Proposer's ownership of the site, option to purchase the site, lease for the site, or letter signed by the owner of the site which provides firm evidence of the commitment of the owner to assure availability of the site. A letter from the site owner, if provided, must be signed by a corporate official or other appropriate person with authority to make binding commitments about use of the site.

If alternate sites are being proposed, evidence of commitment of each site must be documented and submitted in the Proposal. The information requested in Section 5 of this PON should be provided for each site, including technical, cost, financial and environmental information. If different amounts of funding are being requested, depending on the site, or if different Proposers are involved, additional SF 424's and Authorization Certifications should be provided for those funds and Proposers. The Proposal should clearly indicate for which site the forms are applicable. See Appendix G.

(e) PROJECT TEAM AGREEMENTS

The proposed Project Team must be identified and firmly committed to fulfilling its proposed role in the Project.

The Proposer shall provide from each member of the team a binding agreement, or letter of intent to reach such agreement, that explicitly states the role of the team member in the Project and the nature of its business relationship for this Project. These documents must be signed by a corporate official or other appropriate person authorized to bind these entities. These letters must be included in Volume I of the Proposal.

(f) REPAYMENT

The Proposer agrees that, if selected, it will submit a Repayment Plan consistent with Section 7.7.

The Proposer must complete the Certification Form contained in Appendix D and include it in Volume I of the Proposal. The Certification Form will affirm that a Repayment Plan will be submitted after selection. (See Section 7.7, "Recovery of Government's Investment.")

(g) AUTHORIZATION

The Proposal must be signed by a responsible official of the proposing organization authorized to contractually bind the organization to the performance of the Cooperative Agreement in its entirety.

The Proposer must complete and include in Volume I of the Proposal:

- o SF 424, in Appendix G, and
- o Authorization Certification, in Appendix G. If two or more organizations are proposing, each organization should provide a completed Certification Form.

The amount of DOE funding shown on each form should be consistent between the forms and consistent with the Financing Plan in Appendix K, Exhibit E. The DOE funds indicated on the SF 424 and the Authorization Certification represent the amount of DOE assistance being requested by this Proposal.

## 5.2 ORGANIZATION OF VOLUMES II - IV

To help in the evaluation, all Proposals must adhere to the following outline:

### Volume II: Demonstration Project

- II.A Introduction
- II.B Project Technical Description\*
- II.C Detailed Description of Novel Technology
- II.D Demonstration Facility Site\*
- II.E Project Environmental Aspects\*
- II.F Technical and Management Approaches\*
- II.G Exceptions, Deviations, and Assumptions

### Volume III: Commercial Concept

- III.A Introduction
- III.B Environmental Performance
- III.C Energy Efficiency
- III.D Cost Performance
- III.E Commercialization Potential
- III.F Exceptions, Deviations, and Assumptions

### Volume IV: Cost and Finance

- IV.A Cost Estimate\*
- IV.B Funding of the First Budget Period\*
- IV.C Funding of the Remaining Budget Periods\*
- IV.D Project Team Commitment\*
- IV.E Exceptions, Deviations, and Assumptions

\*Supplemental Sections should be supplied for each alternate site, if proposed.

### 5.3 PREPARATION OF DEMONSTRATION PROJECT PROPOSAL (VOLUME II)

The purpose of this Volume is to describe the Demonstration Project itself. The format for this Volume asks for information in increasing levels of detail.

#### 5.3.1 Proposal Section II.A - Introduction

The Proposer shall provide a Public Abstract and a Project Summary Form which will give an overview of the Demonstration Project and the proposed technology.

##### 5.3.1.1 Public Abstract

The Public Abstract shall consist of not more than 750 words. The abstract shall give a brief overview of the proposed Project, the specific proposed Clean Coal Technology, the title of the Project, the name of the Proposer, and the full mailing address of the Proposer and the key members of the proposed Project Team. The name and telephone number of a primary contact is also desirable at the discretion of the Proposer. Not more than two 8.5" by 11" diagrams may be submitted by the Proposer. This abstract may be released to the public by DOE in whole or in part at any time. It, therefore, should not contain proprietary data or confidential business information. The form that should be used for the preparation of the Public Abstract appears in Appendix E. Additional sheets may be added as necessary. Proposers should also submit one separate, unbound copy of the Public Abstract in package 1 (Section 3.31).

##### 5.3.1.2 Project Summary Form

The Proposer shall complete and submit the Project Summary Form provided in Appendix F. Information considered to be proprietary or business confidential should be appropriately marked. DOE will use this form, excluding proprietary and business confidential information, in its Comprehensive Report to Congress which is issued after selection. Proposers should also submit one separate unbound copy of the Project Summary Form in package 1 (Section 3.31).

Instructions for completing this form are:

- (1) Technology Type. Same as for the Proposal cover forms, Item (2). See Section 3.30, "Cover Sheet Instructions".
- (2) Proposal Title. Same as for the Proposal cover forms, Item (3). See Section 3.30, "Cover Sheet Instructions".
- (3) Proposer Name. Same as for the Proposal cover forms, Item (4). See Section 3.30, "Cover Sheet Instructions".
- (4) Proposer Address. Provide the full mailing address of the Proposer. This address should reflect the party whom DOE will contact when necessary.
- (5) Primary Contact. Enter the name, title, and phone number for the person whom DOE should contact if the need arises.
- (6) Secondary Contact. Enter the name, title, and phone number for the person whom DOE should contact if the principal contact is unavailable.
- (7) Project Location. Identify the geographic location(s) of the proposed Demonstration Facility to the extent possible, by city, county and state.
- (8) Congressional District(s). Identify the congressional districts for the Demonstration Facility site and for the Proposer's address.
- (9) Applications. Refers to commercial use of proposed Clean Coal Technology.
- (10) Types of Coal to be Used in the Proposed Demonstration Facility. Coal bed name and typical sulfur content, e.g., Pittsburgh Number 8 (3 percent sulfur).

- (11) Coal Source. Refers to above Item (8); mine and location if known.
- (12) Project Size (coal use rate or other measure of proposed project size, (e.g., 10 tons of coal/hour, 650 MWe power plant)
- (13) Proposed Duration of Each Project Budget Period. Expressed in months.
- (14) Proposed Project Total Duration. Expressed in months.
- (15) Proposed Project Cost by Budget Period. State the cost of the proposed Project by Budget Period.
- (16) Estimated Total Cost of the Project (Proposer and Government).
- (17) Proposer's Cost Share for Each Budget Period. State as percentages of the costs given for above Item (14).
- (18) Proposer's Cost Share. State the percentage of the total given for above Item (15).
- (19) Project Team Members. (See Section 3.9, "Solicitation Definitions," and Section 5.1, "Preparation of Volume I: Qualification Proposal," Part (e), "Project Team Agreements.") Use additional sheets of paper if necessary.

#### 5.3.2 Proposal Section II.B - Project Technical Description

The Proposer shall provide a general description of the proposed Project. This discussion should show how the demonstrated technology will be used either alone or in combination with other available technology options. This discussion should address the following topics:

- o The process concept and how it operates (include preliminary process flow diagram(s) with major equipment items and energy and material



balances around each major process unit and the overall plant, indicating temperature, pressure, and composition of major streams).

- o Inherent advantages of the process compared with available commercial technologies.
- o The important process chemistry.
- o Other information the Proposer believes is necessary to provide a clear understanding of the processes involved in the Demonstration Project.

### 5.3.3 Proposal Section II.C - Detailed Description of Novel Technology

#### 5.3.3.1 Proposal Section II.C.1 - Proposed Technology Description

The Proposer must provide a specific discussion of the innovative aspects of the proposed technology. A technology envelope must be drawn around that portion of the proposed Demonstration Facility that represents the novel aspects of the demonstration. Equipment outside of this envelope should be commercially available and represent a low to negligible technical risk in the service proposed. The Proposer must identify the demonstration technology so that Demonstration Project Factors (a) and (b) can be evaluated (see Section 4.4.1.1).

#### 5.3.3.2 Proposal Section II.C.2 - Technology Development Status and Readiness for Demonstration

The Proposal must discuss and provide evidence of the readiness of the technology for demonstration at the size proposed. The Proposer must document work accomplished to date, including a discussion of the data collected in the earlier development of the technology. The Proposer should distinguish its prior work from third party work and discuss the relevance of third party work to the proposed Project. The extent of process work completed to date and on going development activities, including details of operation, must also be provided. The key process transitions (where applicable) from bench to pilot scale and from batch to continuous operation must be discussed. Data and results from these

operations should be provided to demonstrate that a sufficient basis exists for scaleup.

If Project Specific Development Activities are proposed, describe them in detail. Show how these activities contribute to the technical readiness for the proposed Demonstration Facility. Inclusion of Project Specific Development Activities will not, per se, have either an inherently positive or negative effect in the evaluation of the present criterion. Project Specific Development Activities should be used only to improve technical definition of the Demonstration Project. They should not be used for general technology development.

A discussion also must be provided to show the degree of scaleup required to bring the technology from its current state of development to the demonstration scale proposed. In this scaleup discussion, the Proposer must identify all significant items of equipment and processes that have not operated at the proposed scale or with the proposed technology. Present conditions of expected operation. Discuss key process integration issues as well as risks and uncertainties based on prior work.

The technical risks that could affect the success of the Demonstration Project must be identified and discussed. The discussion must address any measures proposed to mitigate or overcome these risks. The Proposer also should provide any other pertinent information that serves to show that the data base supports the decision to advance the technology to the proposed demonstration scale.

#### 5.3.3.3 Proposal Section II.C.3 - Adequacy, Appropriateness, and Relevance of the Demonstration

The Proposer must explain how the information generated during the Demonstration Project will remove all major technical barriers to commercialization and enable the private sector to make rational commercialization decisions. The Project itself must demonstrate all the facets of the proposed technology that are inside the technology envelope (see Section 5.3.3.1) and that are key to commercial implementation (e.g., process integration, vessel scale). The Demonstration Project, however, need not be a complete, full-scale prototype commercial plant. It may be, for example, a single module in a multi-module plant or be of smaller

than commercial scale. The Proposer does not need to include all the unit operations that would be present in a commercial plant if evidence is submitted showing that the components or subsystems not included have already been successfully demonstrated or are used commercially. If these components or subsystems are being demonstrated elsewhere, or are planned to be demonstrated elsewhere, the Proposer must provide information on these activities. This discussion should be sufficient to explain how the results of these other demonstrations will add to the database needed for commercialization.

As part of this discussion, the Proposer must address at least the following topics:

- o Rationale for Project size
  - justify Project size in light of expected commercial applications
  - document circumstances where financing or other considerations require larger sizes than otherwise needed for demonstration.
- o Relationship to other work
  - explain the degree to which technical approach has not been demonstrated at commercial scale
  - justify duplication with other demonstrations.
- o Degree of uncertainty in moving from demonstration to commercial scale
  - identify key data and test results (technical, economic, environmental, and operating) from the Demonstration Project that are needed to support the commercialization
  - discuss how the data from the Project will be used.

Proposed Projects that include unnecessary elements (e.g., components, systems, processes, or operations that have already achieved widespread commercial

acceptance and are not required for successfully demonstrating the proposed technology) will be considered to be less than fully appropriate. Choice of a Project size larger than necessary to provide the key information for commercialization, the scheduling of unnecessary tasks or tests, and the collection of unnecessary or of only marginally important data, will also be considered less than fully appropriate. It is recognized that Project financing considerations may cause the inclusion of components, subsystems, or tests or choice of Project scale that is greater than that required to provide the minimum necessary technical data. In such instances, the Proposer should fully document the extenuating circumstances.

#### 5.3.4 Proposal Section II.D - Demonstration Facility Site

##### 5.3.4.1 Proposal Section II.D.1 - Demonstration Facility Site Description

Describe the Demonstration Facility site location and its salient characteristics. Include the requirements and availability of labor, raw materials, utilities, and other infrastructure needed for construction and operation. For key raw materials such as coal and water, state requirements and the plan to acquire them including resources, methods of extraction, and transportation. For water, discuss potential constraints on availability.

##### 5.3.4.2 Proposal Section II.D.2 - Demonstration Facility Site Suitability

Discuss the advantages and disadvantages of the proposed site in the context of the demonstration. This discussion should include any interfaces with existing facilities.

#### 5.3.5 Proposal Section II.E - Project Environmental Aspects

Information supplied in this section will be used in the preparation of the "Pre-Selection Project Specific Environmental Review" (See Section 3.26.2).

#### 5.3.5.1 Proposal Section II.E.1 - Air Emissions

Analyze and discuss the changes in air emissions attributable to the Demonstration Facility. Include in this discussion sulfur dioxide, the oxides of nitrogen (including nitrous oxide), particulate matter and any toxics that are currently subject to State or Federal regulation. Include the effects of modifications in equipment and operating procedures (e.g., load factor and output). Include calculations and predictions for the increase or decrease in air emissions at the Demonstration Facility site expressed in units of millions of pounds per year. Include the basis for calculations in the discussion. Discuss any special considerations that should be taken into account by DOE in evaluating impacts of project-related emissions changes on air quality.

#### 5.3.5.2 Proposal Section II.E.2 - Production and Handling of Other Effluents, Wastes, and Byproducts

Describe the provisions for handling and managing solid and liquid wastes. Include in this discussion methods for storage, treatment, transportation, use, or disposal. Estimate volumes and composition of each waste stream and final product. For disposal, discuss whether stabilization or pretreatment will be required, the availability of disposal sites, and whether liners and monitoring will be required at disposal sites. If utilization of waste is planned, describe the uses and markets.

#### 5.3.5.3 Proposal Section II.E.3 - EHSS Compliance

Identify EHSS requirements as of June 30, 1992, applicable to the Project. Describe the capability to comply with EHSS regulations and standards. Estimate environmental discharges (air emissions, water effluents, liquid and solid wastes, etc.) and compare with relevant standards. Provide data and analyses to support conclusions about compliance, including preproposal test data, analyses of technology and process performance. Include information about similar applications for any planned control technologies. Summarize the status and schedule for obtaining permits, modifications to permits required for existing facilities, and anticipated impediments to the permitting process. Discuss options available for controlling discharges (e.g., process design variations and

alternative control methods) if compliance problems exist (e.g., performance shortcomings or more stringent regulations).

#### 5.3.5.4 Proposal Section II.E.4 - EHSS Risks and Impacts

Identify EHSS risks and impacts of the proposed Project, such as potential impacts on human and animal populations, historical sites, parks, wilderness areas, and sensitive resources within the range of influence of the Project. Summarize the general approach, special safeguards, and environmental controls that will be used to ensure the protection of Project workers and local residents from health and safety risks. If retrofitting or repowering an existing facility, directly compare the EHSS attributes of the Project to those of the existing facility. Describe discharge reductions or increases resulting from the Project. In particular, estimate changes in air emissions and water effluents and their impact on local air and water quality.

#### 5.3.6 Proposal Section II.F. - Technical and Management Approaches

The Proposer should describe the plans for the Demonstration Project at a level of detail appropriate for the planning stage.

##### 5.3.6.1 Proposal Section II.F.1. - Technical Approach

The Proposer must define and discuss the logic for the technical approach employed to complete the Project. This discussion must include but is not limited to the following aspects:

- How predemonstration background data will be used in the Demonstration Facility;
- How planned Project Specific Development Activities (if proposed) will adequately support the design, construction, and operation of the Demonstration Facility;
- How operations will be conducted to collect the data identified in Proposal Section II.C.3;

- o How Project technical and environmental data will be analyzed, evaluated, and reported;
- o Final disposition of the Demonstration Facility; and
- o Disposition of the demonstration products and byproducts.

The Proposer must provide a SOW of sufficient detail to verify the technical approach. This SOW should appear as Appendix A to Volume II of the Proposal. The SOW must outline the project by task according to a WBS listing the logical sequence of activities to complete the Project. The SOW should include a Project milestone schedule including decision points. The proposed SOW must define the Project work and be structured in agreement with the following WBS:

WBS Level 1 - Total Project  
WBS Level 2 - Project Phases  
WBS Level 3 - Work Tasks

Project phases should be structured as follows:

Phase I: Design  
Phase II: Construction  
Phase III: Operation

For this Proposal, Project Specific Development Activities and Project Definition Activities should be included in the first Budget Period of the proposed Demonstration Project.

The Government requires the reporting of certain technical, economic, and environmental data that will result from the Project. Attachment C to the Model Cooperative Agreement (Appendix L) contains the list of expected reports. Proposers should review this list and make suitable provisions in Project planning. The SOW must also provide for formal Project reviews. The number and timing of such reviews should be consistent with the size and scope of the Demonstration Project.

The Proposer must provide and discuss a milestone schedule which identifies Project phases and major decision points. The Proposer is cautioned that completion of NEPA requirements (40 C.F.R. § 1506.1) by DOE may take 12 months for an Environmental Assessment and approximately 24 months for an Environmental Impact Statement. A discussion of the Government role in Project decision making appears in Section 6.3 of the PON and in Article III(B) of the Model Cooperative Agreement (Appendix L).

The three Project phases must correspond to design, construction, and operation. Subdivision and overlap of the phases, however, is permissible. Key milestones during each phase should be identified and described.

The major Project decision points identified by the Proposer will represent explicit decisions by both the Participant and DOE either to continue or end participation in the Project. These decision points need not correspond to the beginning or end of Project phases. They will serve, however, to define the Budget Periods. As a result, the Proposer should explain the rationale for the decision points selected. A discussion of the precise mechanism to provide for continuation from one Budget Period to the next appears in Section 6.3. See also Appendix L, Article VIII, Project Decision Making.

#### 5.3.6.2 Proposal Section II.F.2 - Management Approach

The Proposer must describe the overall Project management strategy that specifies the nature of the procedures and methods by which Participant will manage and control Project activities. These activities include Project Specific Development Activities (if applicable), engineering, procurement, construction, start-up, and operation of the Demonstration Project. The Proposer should describe its documentation and control procedures as they relate to management, monitoring, and reporting of technical, EHSS, cost/schedule and financial data.

The Proposer must show the functional relationship among the Participant and the Project Team members. Explain the management and control of the various activities of Project Team members and any designated Project contractors.



The Proposer must explain the capability of the Participant to manage the Demonstration Project by providing details of prior company experience, 'key managers' experience, and the percentage of key personnel time that will be devoted to the Demonstration Project. Capabilities and relevant experience of Project Team members shall also be described.

#### 5.3.7 Proposal Section II.G. - Exceptions, Deviations, and Assumptions

The Proposer shall identify and explain exceptions, deviations, or conditional assumptions taken to the requirements of this Volume. Any exceptions, deviations, or conditional assumptions taken must contain sufficient explanation and justification to permit evaluation. Numerous exceptions, or one or more significant exceptions, may result in rejection of the Proposal as unacceptable. Selection of a Proposal for negotiation will not be an indication that DOE accepts the exception, deviation, or conditional assumption contained in the Proposal.

#### 5.4 PREPARATION OF COMMERCIAL CONCEPT PROPOSAL (VOLUME III)

The purpose of Volume III is for the Proposer to present the commercial embodiment of the demonstration technology and salient features of its performance and cost, and to establish its commercial potential. The format for Volume III is for presentation of material in the following order:

- description of the expected commercial embodiment,
- identification of the principal expected market for the technology and its major competition,
- performance and cost of the technology,
- size of market for the technology and expected market penetration,
- commercialization plan to address the projected market, and
- commitment to subsequent commercialization

As explained more fully in Sections 5.4.2 through 5.4.4 below, some Proposers of technologies to produce coal-derived fuels or chemicals may wish to describe the commercial embodiment of their technology in terms of two sites. For instance, a fuel or chemical may be produced at one site and used at another site to

produce electricity or another product. The cost and/or efficiency improvements offered by a proposed technology may be advantageously explained by showing how a coal-derived product is used at a second site. If a Proposer believes that use of multiple sites helps illustrate the advantages of its technology, it may choose to do so. A Proposer is not obligated, however, to include two sites in describing its commercial embodiment. It is acceptable for a Proposer to limit its commercial embodiment to the site where its coal-derived product is produced. Proposers that elect to describe their commercial embodiment by means of two sites must include additional information. They must describe environmental performance, efficiency, and cost at each site that figures in the use of their technology and of its principal product. Proposers that intend to use two sites to elaborate the commercial embodiment of the proposed technology, must state this in Proposal Section III.A, Introduction. Information for each site must then be included in Proposal Sections III.B,C, and D.

#### 5.4.1 Proposal Section III.A - Introduction

This section of the Proposal should provide an overview of the commercial embodiment of the proposed technology, its intended market, and the approach to commercialization. Expected competition in the marketplace for the proposed technology must also be identified.

A brief discussion of the anticipated commercial embodiment of the proposed technology should be provided. The description should include all key features of the commercial embodiment of the technology, the expected capacity range, and interfaces with other equipment or processes. The Proposer should state whether the purpose of the technology is to produce a product (power, fuel, or chemicals) via combustion or other transformation of coal or to provide a service (avoidance or reduction of emission of one or more pollutants). It is important that features of the commercial embodiment different from that used in the Demonstration Facility be described.

The Proposer should briefly describe the intended market for the technology, including, as appropriate, its application in retrofitting/repowering existing facilities and in new installations. The principal intended market for the technology through the year 2030 should be stated. The Proposer should state

whether the larger number of units of the technology is expected to be installed in retrofitting/repowering, or in new facility applications.

At least one, commercially replicated, and coal based technology must be identified as competition with the proposed technology for market share. More than one commercially replicated technology may be identified as competition, as may another technology that is still in the development stage, at the option of the Proposer. In addition, the principal competition expected for marketing the proposed technology or an explanation why this is impractical must be provided. As detailed below, the Proposer will compare the performance of the proposed technology with that of the competing technology(s). The basis for selecting the competing commercial technology should be explained. DOE emphasizes the importance of a realistic choice of competing commercial technology. References should be given for the source of performance data used for the competing commercial technology.

#### 5.4.2 Proposal Section III.B - Environmental Performance

In this section, the Proposer must discuss the environmental impacts of the commercial embodiment of the proposed technology. Environmental impacts include the quantity and quality of air, liquid, and solid effluents, and resource requirements. Worksheets 1, 2, 3, and 4 of Appendix I must be completed and included in this section of the Proposal.

To provide a basis for assessing the environmental performance of the technology, the Proposer should describe a commercial installation of the proposed technology in a size and configuration that is representative of its major target market. Plant performance should be described when using one of the two coals for which data are given in Appendix I, an Eastern bituminous and a Western subbituminous coal. The coal type expected to find greater use in commercial replications of the proposed technology should be chosen.

In presenting the flowsheet for Worksheet 2, Proposers must show a complete process for coal to product that includes the proposed technology. If the proposed technology encompasses conversion of coal to a product, the proposed technology may be the only one shown on the Worksheet. If, however, the proposed

technology provides a service, the Proposer must show its use in conjunction with other equipment and processes that, taken together, produce a product from coal. If the Proposer elects to describe its commercial embodiment in terms of two sites, a Worksheet 2 must be developed for each site. Each of these Worksheets must show the conversion of coal or a coal-derived product to a higher value product. Proposers of technology whose major anticipated market is the retrofit or repowering of coal-fired power plants are invited to use the example plant described in Attachment A of Appendix I to develop their commercial embodiment. Proposers are free to choose any commercially replicated technology for use with their own to fulfill the requirements for Worksheet 2, however.

Quantitative information on the emission rates from the process described in Worksheet 2 should be given by the Proposer in Worksheet 4 of Appendix I. All emissions subject to Federal or State regulations in the intended market area should be addressed. Effluent emission rates should be given as unit quantities of effluent per MMBtu of coal feed. For technologies that generate power, effluent rates should also be given in units of pounds per kWh.

For proposed technologies that convert coal to a product, all emissions listed in Worksheet 4 may reflect the environmental performance of the proposed technology. For technologies that do not produce a product, but rather a service consisting of emission control, only those emissions that change due to use of the proposed technology will be used by DOE in its evaluation. The Proposer must indicate in Worksheet 4 which emissions are subject to control by the proposed technology.

The Proposer should explicitly discuss the production and disposal of solid wastes and, if appropriate, their use or conversion to useful byproducts. Secondary environmental implications at the plant site resulting from the use of the proposed technology must be addressed (for example, ammonia slip or spent catalyst disposal from a nitrogen oxide control process).

The environmental impacts that must be addressed include:

- o Emissions to the air, including:

- Oxides of nitrogen
  - Sulfur dioxide
  - Carbon monoxide
  - Particulate matter, including fine particulates (PM 10)
  - Air toxics in applications currently subject to regulations (e.g., coke oven emissions). List separately.
- o Solid wastes and solid byproducts (Identify solid wastes as hazardous or non-hazardous and give RCRA characteristics. Include catalysts.)
  - o Wastewater streams including cooling tower blowdown (List separately. For each stream give flow rate in gallons per MMBtu of coal feed and wastewater characteristics, e.g., total dissolved solids, total suspended solids, pH.)
  - o Other liquid waste streams
  - o Water Consumption (gal/MMBtu of feed coal)

With respect to emission of air toxics, Proposers should consider in addition to the items noted above the particular elements and compounds contained in Table 5-1 (it is DOE's intent that these toxics will be monitored at Demonstration Facilities that receive an Award, see Section 3.26.4). Proposers should present any information known concerning the reduction of emissions of these toxics by their technology. Some of the toxics for which the proposed technology may offer control are likely unregulated in the target market at present. The significance and importance of the additional control afforded by the proposed technology for the continued use of coal should be explained. An example of this kind would be one or more particular air toxic compounds controlled by a technology meant for use in power generation.

If known, discuss dependence of environmental performance for each key effluent listed on coal-specific properties such as sulfur content, rank, ash constituents, etc., and on other relevant factors such as unit capacity.

Table 5-1

## SPECIFIC AIR TOXICS TO BE MONITORED

<u>Elements/ Compounds</u>	<u>Inorganic Compounds</u>	<u>Organic Compounds</u>
Antimony	Chlorine/Hydro-	Formaldehyde
Arsenic	chloric Acid	
Barium <sup>1</sup>	Cyanide Compounds	Semi-Volatile Organics Identified by
Beryllium	Fluorine/Hydrogen	EPA Method 8270 <sup>2</sup>
Cadmium	fluoride	- including Polycyclic Organic
Chromium	Phosphorus/	Matter
Cobalt	Phosphates	
Lead	Radionuclides	Volatile Organics Identified by EPA
Manganese		Method 8240 <sup>2</sup>
Mercury		- including Benzene, Toluene
Nickel		
Selenium		
Vanadium <sup>1</sup>		

<sup>1</sup> Not included in list of Title III HAPs, but included for comparison with results from other air toxics studies.

<sup>2</sup> Analysis by Gas Chromatography/Mass Spectroscopy

Compare the environmental performance of the proposed technology with that of the competing commercial technology(s). Where appropriate, draw attention to differences in performance of the two technologies for controlling particular pollutants. Also, any major differences in environmental performance between the Demonstration Facility and the commercial embodiment should be explained.

#### 5.4.3 Proposal Section III.C - Energy Efficiency

In this section of the Proposal, the Proposer will present data describing the energy efficiency of the proposed technology. Worksheet 2 contains the information necessary to evaluate this criterion.

DOE expects that for most Proposals, the analysis of efficiency will treat the site where the proposed technology is operated without additional equipment or processing. As explained above, however, some Proposers may find it advantageous to extend the description of the commercial embodiment of their technology to include facilities physically separated from where the proposed technology is used to produce a coal-derived product. For instance, the proposed technology may generate as its principal product a fuel with improved properties relative to the coal used in its manufacture. By use of the fuel it may be possible to generate power in compliance with environmental regulations without use of control equipment that would otherwise be necessary. The Proposer would be able to claim credit for this or any other improvement in overall efficiency attributable to use of its product. For those technologies which produce a product intended for use as a fuel or feedstock at another site and have used two sites to describe their commercial embodiment, the Proposer must address the expected energy efficiency of that fuel or feedstock in its anticipated use at the utilization facility as well as at the production facility.

In this section of the Proposal, the energy efficiency of the proposed technology should be compared to the efficiency of the competing commercial technology(s). The effect on efficiency of differences in technical approach between the two technologies should be explained. Any effects on efficiency of different levels of environmental performance noted in the previous Proposal section should be explained. If the proposed technology has higher efficiency than its competition, reasons should be given for its superior performance. If the

proposed technology does not offer higher efficiency, any mitigating consideration, such as differing environmental performance, should also be explained. The reasons for any major differences in energy efficiency between the Demonstration Facility and its commercial embodiment should be explained.

#### 5.4.4. Proposal Section III.D - Cost Performance

In this section of the Proposal, the Proposer must present the cost of producing the product(s) or service(s) that its technology is designed to provide. Worksheets 5, 6, and 7 in Appendix I must be completed and included in this section of the Proposal. The information in these worksheets will be used to compute costs in a uniform format.

For Proposals that use two sites in their commercial embodiment, cost information must be given for each site. Comprehensive capital and operating costs must be developed for the site where the product(s) are produced. For a site where the principal product is consumed or transformed, capital costs must be given for any modification of existing equipment needed to permit use of the product. New burners or fuel storage and handling equipment may be needed to accommodate use of a new fuel, for instance. Any incremental increase in operating costs occasioned by use of the principal product must be given. If use of the principal product of the proposed technology results in economies at the site of its use compared to operation with the fuel or chemical that it displaces, such economies must be explained and quantified. Economies might result, for instance, by avoiding need for emission control equipment while achieving environmental compliance or by realizing lower fuel or feedstock costs through use of the principal product.

Since the proposed technologies are still in the development stage, the Proposer should summarize the approach used in the compilation of its cost estimate for the commercial embodiment. To treat uncertainties in cost due to scaleup, process contingency factors must be used as directed in Appendix I. Explain the role that the Demonstration Facility plays in the calculation.



Discuss the effect of variables to be encountered in the commercial application of the proposed technology that will impact cost. Include in the discussion the effects of coals (sulfur content, rank, ash constituents, etc.), unit capacity, location, retrofit or greenfield, and any other salient factors.

#### 5.4.5 Proposal Section III.E - Commercialization Potential

In this section of the Proposal, the Proposer must address three issues: the size of the market for coal in which the proposed technology will compete, the fraction of market share that the proposed technology can reasonably expect to capture due to its performance and cost characteristics, and the commercialization plan to realize the market potential.

The Proposer must describe the expected size of the coal market for which the proposed technology will compete, domestic and export, from 1992 through 2030. The market projection should be compatible with Figure C-23 presented in The National Energy Strategy: Powerful Ideas for America, First Edition, February 1991 (this document is available from the National Technical Information Service, Springfield, VA). The NES Scenario case in Figure C-23 should be used. This scenario shows that annual coal consumption in the United States will be 32 quads by the year 2030. Implications of the projection of coal use should be translated into expected market for new capacity for equipment of the type proposed through 2030. Reference should be made to the comparative environmental performance, efficiency, and cost of the proposed and competing commercial technologies developed above, as well as all other factors germane to the competitive position the proposed technology will hold in its intended market. On this basis, the Proposer should indicate the expected market for its technology from the completion of the demonstration through 2030.

Proposers are invited to develop broadly their thoughts on the environmental constraints that may affect coal use over the next several decades in the intended market for the technology. Reference to particular documents such as the Clean Air Act Amendments of 1990 or statements by the EPA or State environmental regulatory agencies would be welcome in support of their vision. Explain why the emissions controlled by the technology are key to addressing the

environmental hurdles for coal in the intended use of the technology. Explain why the degree of control achieved (e.g., percent removal) is sufficient to satisfy environmental requirements for particular pollutants that can reasonably be anticipated in the future.

The Proposer must describe the extent of market penetration anticipated. This discussion should identify the principal competing technologies and processes. Discuss the competitive advantages of the demonstration technology.

The Proposer must discuss how it intends to commercialize the proposed Clean Coal Technology. The discussion should define the Proposer's role and the role of other parties, including applicable demonstration Project Team members, in the commercialization of the technology in the United States. All relevant business aspects should be discussed in sufficient detail to clearly show how the Demonstration Facility fits into the commercialization approach. Identify the extent to which the commercialization of this technology will ensure a competitive position for U.S.-based industry in applicable domestic and international markets and provide subsequent value-added benefits to the U.S. economy (an enhanced trade position, jobs for U.S. workers, increased tax revenues, etc.). All critical factors required to achieve commercialization, such as financing, licensing, engineering, manufacturing, and marketing, must be identified and discussed. Describe how any needed changes in infrastructure (including distribution, equipment services, etc.) that are necessary to achieve commercialization will be accomplished.

As evidence of the Proposer's commitment to the commercialization approach the Proposer should describe and explain the priority placed by its senior management, its parent's senior management, and the senior management of key Project Team members, for accomplishing the commercialization effort. Describe how the proposed technology fits into the various corporate entities' business, marketing, or energy utilization strategies. Describe the individual corporate investments to date in development of the technology and the cost of any significant parallel efforts that will be on going during the Demonstration Project. Provide specific statements by senior management of the various concerned firms showing commitment to the Project and subsequent commercialization efforts.

#### 5.4.6 Proposal Section III.F - Exceptions, Deviations, and Assumptions

The Proposer shall identify and explain exceptions, deviations, or conditional assumptions taken to the requirements of this Volume. Any exceptions, deviations, or conditional assumptions taken must contain sufficient explanation and justification to permit evaluation. Numerous exceptions, or one or more significant exceptions, may result in rejection of the Proposal as unacceptable. Selection of a Proposal for negotiation will not be an indication that DOE accepts the exception, deviation, or conditional assumption contained in the Proposal.

#### 5.5 PREPARATION OF COST AND FINANCE PROPOSAL (VOLUME IV)

The contents of Volume IV should provide DOE with sufficient information to evaluate the Proposal with respect to the Cost and Finance Evaluation Criteria presented in Section 4.4.2. The information requirements for the Cost and Finance Evaluation Criteria are described below under the respective section headings (see Section 5.2) for the Cost and Finance volume.

Proposers must complete the certifications in Appendix H, ASSURANCES - NON-CONSTRUCTION PROGRAMS; CERTIFICATION REGARDING DRUG-FREE WORKPLACE REQUIREMENTS; CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS. PRIMARY COVERED TRANSACTIONS and DISCLOSURE OF LOBBYING ACTIVITIES. Proposers should also complete the Preaward Accounting System Information in Appendix O. Include these documents at the end of Volume IV.

##### 5.5.1 Proposal Section IV.A - Cost Estimate

The Proposer must provide an explanation of: (i) the design basis to support its cost estimates, (ii) the estimating methods that were used, and (iii) the level of accuracy of the estimate.

The Proposer must complete the appropriate Appendix K material in support of its cost estimates. Successful Proposers will be required to submit a more detailed cost estimate after selection and before Award. Guidelines for the preparation of this estimate will be provided during the post selection fact finding process.

If the post selection cost estimate is higher than the cost estimate submitted in the Proposal, DOE will be under no obligation to increase the amount of DOE funding above that which was requested in the Proposal. Therefore, it is very important that the Proposer develop an estimate which is adequate for completing the SOW activities. The Proposer should take note, when developing the cost estimate, to consider the potential schedule impacts of the NEPA process (discussed in Section 5.3.6.1). The cost estimate (including preaward cost) should be consistent with the requirements of Sections 7.2 through 7.4 which address the allowable and unallowable costs.

Cost information must be consistent with the WBS and SOW for the proposed Demonstration Project.

- Exhibit A will present a summary estimate in whole dollars by phase (Phase 1 - Design, Phase 2 - Construction, and Phase 3 -Operation) and by task (i.e., level 3 of the WBS). The Project Specific Development Activities and Project Definition Activities should be identified as separate tasks in Phase 1. At this time, information below level three of the WBS is not required. As described in section 6.1, however, cost details beyond the information submitted in Appendix K should be available for review and assessment during the post selection period.
- Exhibit B will delineate the cost estimate by WBS task and element (labor, materials and equipment, etc.) for each of the Project Team members.
- Exhibit C.1 will further delineate the equipment cost by equipment item.

When completing these forms, check consistency among Exhibits A through H as well as with the Authorization Certification or Standard Form 424 in Appendix G. The Proposer is also reminded that the DOE cost share percentage cannot exceed 50 percent of allowable costs by Budget Period and is limited to the same percentage for preaward as the overall DOE cost share percentage for all Budget Periods.

The DOE share of Project Specific Development Activities is limited to ten percent of the DOE share of total Project costs.

#### 5.5.2 Proposal Section IV.B - Funding of the First Budget Period

At a minimum, the first Budget Period should include the Project Specific Development Activities (see Section 7.3), the project definition activities (see Section 6.3), and any preaward activities (see Sections 7.2). The Proposer may, however, include additional activities in the first Budget Period consistent with Project requirements and the prudent use of DOE funds. If the Proposer is including additional activities in the first Budget Period, these activities must be clearly identified. The first Budget Period funding requirements will be identified in Exhibits E, E.1, and F (if In-Kind Contributions are included) of Appendix K along with the funding requirements of the remainder of the SOW activities (Exhibit E.2). During post selection fact finding and negotiation, DOE and the Proposer may agree to redefine the tasks included in the first Budget Period. Impacts on cost and confirmation of the financial commitment would be reevaluated at that time.

The information provided in Exhibit E.1 should clearly identify the sources of financing for the first Budget Period of the Project. The total amount of financing provided by these sources must be in agreement with the estimated costs in Exhibits A and B for the first Budget Period activities.

To receive full credit for the evaluation of this criterion, a representative with the authority to commit funds for each entity identified in Exhibit E.1, should provide a signed statement of the amount and type of funding. It should show that such funds will be available as needed. These statements are to be included in this section of the Proposal. The statements can be subject to reasonable business terms (e.g., successful negotiation of Cooperative Agreement).

Projects that may have completed those activities normally associated with the first Budget Period can still compete for points under this criterion. In such a case, this Section of the Proposal must contain evidence that the cost and finance baselines have been established as described in PON Sections 6.1 and 6.3.

Additionally, in this case, the Proposer will also be required to have financial commitments in place for all non-DOE funds for the remainder of the Project (see Section 5.5.3) at the time of Proposal submission.

If the Proposer contemplates the formation of a partnership or other legal entity that will become the Participant, then a letter of intent to execute the appropriate agreement should be provided. This letter should explain the nature of this agreement and the financial terms for providing the funds for the first Budget Period. The letter must be included in this section of the Proposal.

If funds are to be raised externally, the terms of the instrument to raise the funds should be described. A statement should also be provided (in this section of the Proposal) by the responsible official of the external source, or the underwriter of the financing instrument, committing the identified funds for the first Budget Period.

Reimbursement of preaward costs by DOE is contingent on the prior approval of these costs by the DOE Contracting Officer and the execution of a Cooperative Agreement (see Sections 7.1 and 7.2).

The Proposer must provide audited financial statements for the three most recent fiscal years and financial statements for the reported quarters of the current fiscal year for each proposed source of equity financing and In-Kind Contribution to the Demonstration Project. If the entity that will be the Participant is providing funds and is not in existence, then provide the same financial statements (quarterlies and audited annuals) for the same periods for each of the parent or predecessor organizations. If the entity that will be the Participant is currently in existence, but has not been in existence for three continuous years preceding the Proposal date, then provide the audited financial statements for both the entity and any parent or predecessor organizations. If the proposed funding source is not clearly identified in the consolidated financial statements, then additional information to support such funding should be provided.

The Proposer should explain its plans for covering potential Project cost increases.

Copies of completed and executed agreements or instruments which provide for the funding of the first Budget Period (e.g., loan, partnership, joint venture, and underwriting of financial instruments) should be included in this Section of the Proposal.

#### 5.5.3 Proposal Section IV.C - Funding of the Remaining Budget Periods

The Proposer must submit a Financing Plan for the funding of the estimated costs for the SOW activities beyond those included in the first Budget Period. A proforma sources and uses of funds statement must also be provided for all SOW activities (Exhibit H).

The Proposer should complete Exhibits E and E.2, and Exhibit F of Appendix K (if In-Kind Contributions are included). The funding levels and information in these exhibits must agree with the costs and information shown in Exhibits A, B, C.1 and D. The Proposer is reminded that Program Income can only be projected as a source of funding for Project Specific Variable Operating Costs. If the Project has Program Income, the Proposer must provide proforma income statements per Appendix K, Exhibit G.

In this section of the Proposal, include a discussion supporting the Financing Plan that addresses the pertinent aspects of the following:

- o The sources of equity funds provided by the Proposer, its parent or other Project Team members that will contribute equity funds to the Project.
- o The nature of external financing, the extent to which it will be required, and the prospective source(s) of such funds.
- o The nature of State and local grants, loans, industry sponsored research, or other funding being sought.
- o The justification for In-Kind Contributions and any incumbrance that may prohibit the use or availability of these contributions.

- o Any alternatives developed by the Proposer to provide funding if any portion of the proposed Plan does not materialize.
- o The types and estimated fair market value of assets (if any) that the Proposer or Project Team member will pledge as collateral for any outside financing, any existing encumbrances on these assets, and identification of those entities which will guarantee the financing and the terms of repayment.
- o The extent to which the expected rate regulatory treatment of the Project by State or Federal ratemaking agencies will impact financing.
- o The rationale for the assumptions supporting the projected Program Income statement and the Project Specific Variable Costs estimate (e.g., product sales agreements, stream factors, rate of use of raw materials and chemicals).

If there are sources of funding for the remainder of the Demonstration Project that were not involved in the first Budget Period, then provide the same financial information required in Section 5.5.2 for these additional sources (e.g., three years of audited financial statements).

The proposed funding sources should provide letters in this section of the Proposal that, as a minimum, state (1) the amount of funding that will be provided or is under consideration by their respective organizations, (2) the conditions, if any, that will impact the decision to commit, and (3) the date by which a decision will be made. If funding is to be provided through a loan, specifically for the Demonstration Project, then provide a letter from the source of the loan which provides an overview of the expected terms and conditions. If funding is to be provided by the issuing of a financial instrument (e.g., stock or bond), then provide a letter from the underwriter that address timing and anticipated terms and conditions. The Proposer should discuss any liabilities, limitations, conditions or other factors which could affect the availability of the funding.



In all cases where outside financing is going to be required and Program Income will be generated, the Proposer should provide its proforma income projections for the duration of the Demonstration Project. Such projections will be evaluated by DOE in its assessment of the overall strength of the Financing Plan (see Appendix K, Exhibit G).

If the Project Specific Variable Operating Costs are to be funded through Program Income, then the Proposer must submit evidence that the revenue assumptions and estimates in Exhibit G of Appendix K are realistic. This evidence may consist of purchase agreements (including power purchase agreements), letters of intent to purchase, or letters from brokers indicating the marketability and price of the product. If the product is to be a coal derived fuel or chemical, a conventional fuel being used in a new application, or a by product that has not been generally marketed, then evidence must be provided of the acceptability of this product or by product at the projected price. If a conventionally accepted product or by product is to be produced through a new means of production, then the Proposer must provide evidence that the estimated Program Income in the Financing Plan is achievable, even if there is the risk of the product not being produced at the conventionally accepted specifications. If the Project is to receive Program Income as a result of rentals or service fees, then, as a minimum, a letter of intent describing the terms of payment should be provided to support the Program Income projections.

The Proposer must have financial commitments in place for all of the non-DOE share of total Project cost if the Proposer has developed sufficient detail to baseline the Project (see Section 5.5.2).

Copies of completed and executed agreements or instruments which provide for the funding of the remaining Budget Periods (e.g., loan, partnership, joint venture, underwriting of financial instruments) should be included in this Section of the Proposal.

Proposers are reminded that post-award material alterations to financial representations may be grounds for deselection.

#### 5.5.4 Proposal Section IV.D - Project Team Commitment

The degree of commitment to the Demonstration Project will be measured primarily by the level of financial risk assumed by Project Team members. If In-Kind Contributions are to be provided by any Project Team members, then the Proposer must explain how such contributions are at risk to the provider and their value must be rationalized. DOE views that a Project is more likely to be successful if there is strong Project Team commitment as shown by a member's commitment of funds to the Project for which it (or its parent) is liable.

#### 5.5.5 Proposal Section IV.E - Exceptions, Deviations, and Assumptions

The Proposer shall identify and explain exceptions, deviations, or conditional assumptions taken to the requirements of this Volume and the Model Cooperative Agreement. Any exception, deviations, or conditional assumptions taken must contain sufficient explanation and justification to permit evaluation. Numerous exceptions, or one or more significant exceptions, may result in rejection of the Proposal as unacceptable. Selection of a Proposal for negotiation will not be an indication that DOE accepts the exceptions, deviations, or conditional assumptions contained in the Proposal.

## 6. GOVERNMENT MANAGEMENT PARTICIPATION

### 6.1 PROJECT INFORMATION FLOW

Successful Proposers should note that Award requires a different level of information from that needed for selection. Soon after notice of selection, these Proposers should expect that DOE will request the following information:

- a proposed Repayment Agreement based on the model in Appendix M,
- an updated technical description,
- updated environmental data including the information in Appendix J,
- an updated Financing Plan,
- a preliminary Project Management Plan (see Appendix P),
- a more detailed cost estimate (see Table 6-1),
- information concerning intellectual property particularly about technical data,
- more detailed site information,
- audit data, and
- procurement system information.

This information is necessary before Award and to allow DOE to prepare for negotiation of the Cooperative Agreement.

As described in Section 6.3, it is DOE's intent that the first Budget Period of the Cooperative Agreement will be oriented toward baselining the Project unless these activities have been completed before the making of an Award. In this regard much of the above information will be developed in more detail during the Project Definition Activities. To illustrate this increasing level of information detail, Table 6-1 shows the minimum level of information needed to support the cost estimate at the completion of negotiations (preaward activities) and to support the cost estimate at the completion of the Project Definition Activities.

TABLE 6-1  
INFORMATION FOR COST ESTIMATE AT DECISION POINTS

AWARD	PROJECT DEFINITION ACTIVITIES
o Conceptual flow diagram	o Project Specific Development Activities
o Conceptual heat and material balances	o Engineered process flow diagram
o Projected utility requirements	o Engineered unit heat and material balances
o General site definition	o Preliminary mechanical flow diagrams ("P&ID's") for process and utility units
o Preliminary equipment list with sizing and specification requirements developed to appropriate level	o Preliminary single line diagram
o Factors for installed cost of all commodities including piping, electrical, structural, instrumentation, etc.	o Equipment list with engineered process and mechanical specifications
o "Budget" quotations for major equipment pieces	o Vendor quotations for major equipment pieces
o Factors for battery limits, unit processes, utility systems and auxiliary systems	o Rough material take-offs for commodities
o Project schedule depicting major milestones	o Preliminary engineering for foundations, structures, site preparation
o Regulatory permit requirements	o Instrument list
	o Piping specifications and preliminary line list
	o Detailed Project schedule
	o Approximate field indirects requirement
	o Establishment of field organization and construction plans

## 6.2 POST-SELECTION NEGOTIATIONS

If negotiations do not proceed in a timely manner, DOE may end negotiations (i.e., deselect that Project). The circumstances under which DOE may deselect a Project include, but are not limited to, the following:

- o DOE determines that the prospective Participant is not meeting the agreed upon negotiation milestones.
- o DOE determines that the prospective Participant is unable or unwilling to meet its financial commitment to the Demonstration Project.
- o DOE determines that, after completion of the NEPA process, adverse environmental impacts cannot adequately be mitigated.
- o DOE determines that information in the Proposal that was material to selection was incorrect or untrue.
- o Negotiations reach an impasse.
- o The proposed site is no longer available and an alternative site, which is acceptable to DOE, has not been identified.
- o The prospective Participant withdraws its Proposal.

## 6.3 PROJECT DECISION MAKING

DOE intends that the Participant will manage any Project resulting from this PON; these Projects will not be Government-directed. DOE must be in a position, however, to assure both the meeting of Project goals and the proper use of public funds. As a result, the Government role in Project execution is to monitor Project activities, give technical advice, assess progress by periodically reviewing Project performance with the Participant, and participate in decision making at major Project milestones. Appendix L (the Model Cooperative Agreement)

details the reporting requirements, the limitations on DOE technical advice, and the manner in which DOE will treat sensitive and proprietary information.

The Model Cooperative Agreement also delineates the role that DOE will play in Project decision making. Every Project will be subdivided into several Budget Periods, each of which (except for the last) will end with a decision point. The exact number of Budget Periods will be determined on a case-by-case basis during negotiation. At the start of each Budget Period, the Participant will deliver a Project Evaluation Plan for DOE's approval. This document will detail the expected progress for the upcoming Budget Period and will contain more detail than, but be consistent with, the SOW in the Cooperative Agreement. At the end of each Budget Period, the Participant will deliver a Project Evaluation Report. This report will present a description of Project progress. If the Participant intends to continue the Project, it will also submit a Continuation Application at that time. DOE will not unreasonably withhold approval of the Continuation Application (see Appendix L, Articles VIII and IX).

Project Definition will be completed by accomplishing the items listed below:

- o Technology Baseline - all decisions about flowsheets, major equipment types, equipment placement, and demonstration configuration will be made, and technical definition is at least at the level of detail described in Table 6-1, Section 6.1,
- o Schedule Baseline - the schedule will be of sufficient detail to allow cost estimating to the level of detail discussed in Section 6.1,
- o Cost Baseline - the estimate will be of a quality and accuracy supported by the level of Project definition in Table 6-1, Section 6.1,
- o Project Management Plan - a detailed plan that includes the technical, cost, and schedule baselines for the Project as well as the management controls and procedures for implementing the Project (see Appendix P),

- o Financing - all financial commitments pertaining to the non-DOE share of total Project costs will be signed and implemented, and
- o NEPA - all requested information for DOE to satisfy its responsibility under the National Environmental Policy Act (see Sections 3.26 and 7.11) will have been submitted and the NEPA process will be completed or near completion.

The first Budget Period will, at a minimum, define the Project.

#### 6.4 PROTECTION OF CERTAIN CONTRACT DATA

The DOE, for a period of up to five (5) years after completion of the operations phase of a Cooperative Agreement, may provide appropriate protection including exemptions from subchapter II of Chapter 5 of Title 5, U.S.C., against the dissemination of certain information that results from Demonstration Projects awarded under this solicitation. Such information will be protected if it would constitute:

- (1) a trade secret, or
- (2) commercial or financial information that is privileged or confidential,

if the information had been obtained from and first produced by a non-Federal party.

## 7. GOVERNMENT FINANCIAL PARTICIPATION

This section specifies the significant financial policies and guidelines upon which financial assistance under this PON will be determined.

### 7.1 AMOUNT OF COST SHARING REQUIRED

- o DOE shall not finance more than 50 percent of the total allowable costs of the Project as estimated by DOE as of the date of Award of financial assistance. In addition, the Participant must cost share at least 50 percent in each Budget Period.
- o Preaward costs will be reimbursed only upon DOE's signing of the Cooperative Agreement and only in the same ratio as the cost sharing for the total Project.
- o Postaward costs will be shared between DOE and the Participant on an "as expended", dollar-for-dollar, basis.

### 7.2 ALLOWABLE PREAWARD COSTS FOR COST SHARING

Preaward costs will be allowable to the extent they are related to the following:

- o The costs incurred between selection and Award in the preparation of material requested by the DOE Contracting Officer for the negotiation of the Cooperative Agreement (see Section 6.1).
- o The costs between selection and Award incurred to acquire and deliver the environmental information generated by the Proposer during the period between selection and Award. Of this environmental information, only the information delivered to and accepted by DOE in satisfying the requirements of the post-selection site-specific NEPA process (see Section 3.26.3 and Appendix J) will be accepted for cost sharing purposes.



### 7.3 ALLOWABLE PROJECT COSTS FOR COST SHARING

Allowable direct and indirect Project costs are determined by the Federal cost principles applicable to the Award. Proposed Project costs should be specifically related to the proposed Demonstration Project as defined by the SOW. In addition to the cost principles, the following should be used as guidance in preparing the Cost and Finance Proposal.

- o Project Specific Development Activities for process performance definition, component design verification, material selection, and evaluation of alternative designs may be funded on a cost shared basis up to 10 percent of DOE's share of Project cost. Development activities eligible for cost sharing may include limited modifications to existing facilities for Project related testing but do not include construction of new facilities.
- o If the current cost of operation at an existing facility, such as coal, labor or other costs, is increased as a direct result of the proposed Demonstration Project, only the incremental increase of such costs will be allowable during the course of the Project.
- o Unless legitimate circumstances exist which may justify otherwise, the cost or estimated value of new or existing equipment or facilities proposed for the Demonstration Project will be prorated for the purposes of cost sharing unless the item is dedicated only to the Demonstration Project and the size is not greater than that necessary for the demonstration (see Section 5.3.3.3).
- o The value that will be allowed for contributions of currently depreciating property is the depreciation schedule being used and allowed under statute or IRS regulations for such property. This depreciation will be limited in its cost share value to the depreciation claimed during the life of the Demonstration Project. For contributions of property by tax exempt organizations, a fair use value will be assigned to the property equivalent to the value that would be assigned were the owner not tax exempt.

- o For fully depreciated property contributed to the Demonstration Project and in continuous use during the entire calendar year 1991, a fair use value for the life of the facility will be assigned by DOE. The fair use value will be the average annual depreciation used by the Proposer as permitted under statute or IRS regulations under which it was depreciated.
- o Contributed land will be valued at its fair rental value for the period of the Demonstration Facility.
- o Contributed land, equipment and facilities will be counted as cost sharing only for the periods during which they are brought into use for the Demonstration Project. For example, that portion of a facility used for housing the design team may be credited as a cost share during Phase I, but contributed equipment incorporated in the construction may be credited as a cost share only during those portions of Phases II and III when used. Property owned by one of the Project Team members and made available to the Demonstration Project will be valued according to the principles described above.
- o Value for contributed equipment and facilities will be assigned only to the extent that the facility or equipment is project-related.
- o The cost of disposal of the Demonstration Facility is an allowable cost if proposed and if accomplished during Phase III as described in the Cooperative Agreement.

#### 7.4 UNALLOWABLE PROJECT COSTS FOR COST SHARING

In addition to the cost principles applicable to the Award, the following should be used as guidance in preparing the Cost and Finance Proposal.

- o DOE shall not accept valuation for property sold, transferred, exchanged, or manipulated in any way to acquire a new basis for depreciation purposes or to establish a rental value in

circumstances which would amount to a transaction for the mere purpose of responding to this PON.

- o DOE will not cost share in both the direct cost and depreciation on the same item. Depreciation is not allowable for cost sharing on any item previously charged to the Project as a direct cost. For example, DOE will cost share the direct cost on equipment or facilities purchased or constructed for the Project and charged as a direct cost to the Project but will not also cost share in the depreciation.
- o Interest on borrowing (however represented) and other financial costs such as bond discounts, costs of financing and refinancing capital (net worth plus long-term liabilities), are unallowable Project costs and will not be cost shared. This includes interest on funds borrowed for construction.
- o Facilities Capital Cost of Money (FCCM) as used in Federal procurement actions, shall be an unallowable cost on all real property or equipment acquired by or on behalf of the Participant in connection with the performance of the Project. However, pre-existing FCCM charges are eligible costs.
- o Existing facilities, equipment, and supplies, or previously expended research or development funds are not cost sharing for the purposes of this PON, except as amortized, depreciated, or expensed in normal business practice.
- o Fully depreciated property will not receive any cost sharing value unless it has been in continuous use by the Proposer during the entire calendar year 1991.
- o Foregone fees, profits, or revenues as well as replacement power costs are not allowable costs. Such costs shall not, therefore, qualify as cost sharing, nor will DOE pay any portion of such costs.

- o Fee or profit will not be paid to any member of the Project Team, its affiliates or parents, having a substantial and direct interest in the commercialization of the demonstration technology. Competitively placed contracts and subcontracts for routine supplies and services are not covered by this prohibition.
- o Patents, proprietary data, or prior work will not be valued in determining the Participant's cost share in the Demonstration Project.
- o Allowable costs under past, present or future government contracts, agreements or grants will not be charged against the Cooperative Agreement. Likewise, the Participant may not charge allowable costs of this Demonstration Project, including its share of cost participation, to the Federal Government under other contracts, agreements, or grants.

#### 7.5 ALLOWABLE NON-DOE FUNDING

Unless specifically excepted in other provisions of Section 7, cost sharing may be accomplished by means of cash or In-Kind Contributions made to satisfy allowable direct or indirect costs (See Section 7.3).

#### 7.6 LIMITATIONS ON SOURCES OF NON-DOE FUNDING

The following limitations apply to the source of non-DOE funding that may be offered in the Proposal and that may be provided by the Participant.

- o Revenues or royalties from prospective operation of the Demonstration Facility, beyond the time considered in the Award of financial assistance (i.e., after the end of the Cooperative Agreement) or proceeds from the prospective sale of the assets of the Demonstration Facility, or revenues or royalties from replication of the technology in future Projects or plants, will not be considered for cost sharing.

- o Appropriated Federal funds, other than the DOE cost share, are not allowable as a source of funding for the purposes of this PON.
- o Notwithstanding 10 C.F.R. § 600.113, Program Income may be used for any purpose. The amount of estimated Project revenues, however, that the Proposer may identify as a source of funds in its Financing Plan (Appendix K, Exhibits E.1 or E.2) cannot exceed the Participant's share of Project Specific Variable Operating Costs that will be incurred during Phase III (Operation).

## 7.7 RECOVERY OF GOVERNMENT'S INVESTMENT

Replication of the demonstrated technologies is the objective of the Clean Coal Program. It is the policy of the DOE to recover an amount up to (i.e., not to exceed) the Government's actual contribution to the Project. Repayment will derive from those Projects which are successful and achieve commercial application. Individual Repayment Agreements for each Project will be negotiated. The following points will serve as the basis for these Agreements.

- o The Government's right to recover its contribution shall continue until either the Government has recouped its contribution or 20 years have elapsed from the effective date of the Repayment Agreement (see Appendix M).
- o The Repayment Agreement shall remain in effect unless the Secretary of Energy or designee determines that such repayment places the Participant at a competitive disadvantage in domestic or international markets. The Participant's request for this determination will not be considered before the effective date of the Repayment Agreement.
- o Any unpaid amount remaining at the end of the 20 year period will be forgiven by the Government.
- o Repayment shall only apply to that portion of the technology identified as being inside the technology envelope. This envelope

should be the same as that used in the negotiated clauses dealing with Rights in Technical Data for large businesses. For small businesses and nonprofit organizations where such technical data provisions are not included, the technical envelope for repayment will be defined during negotiations.

- o Repayment will be generated only from the revenue sources specified in the negotiated Repayment Agreement (i.e., corporate assets are not pledged to the repayment).
- o Repayment shall be based on the following potential sources of revenue arising from the commercialization of the demonstrated technology:
  - 1/2 percent of gross revenues from the sale or lease of equipment that is manufactured and embodies the demonstrated technology and
  - 5 percent of gross fees resulting from the licensing of the demonstrated technology.
- o Successful Proposers may provide an alternative plan during negotiations whereby any revenue source may be used to provide payment that, on an annual basis, is equivalent to the revenue which would be realized from the two sources listed above. Once the alternative plan has been agreed to, the Participant shall have the option to use the alternative plan as the sole basis for repayment or provide documentation on sales and licensing so that the amount repaid the Government shall not exceed, on an annual basis, the revenue realized from the above two sources.
- o To promote commercialization, negotiators may agree that a grace period from repayment may be appropriate to facilitate introduction of the technology into the marketplace. This grace period may be for a set period, a certain number of facilities, or a certain number of licenses. The terms for any grace period shall be

developed during negotiations but will not exceed five years or 10 percent of projected sales during the repayment period, whichever is less. The entire duration of any negotiated grace period will be part of the 20 year repayment period.

- o Repayment is limited to facilities and applications in the United States.

#### 7.8 COST OVERRUNS

The Government is under no obligation to share any cost overruns (i.e., costs incurred during the Demonstration Project that are more than those estimated at the date of Award). The Government may, however, at its own discretion, share in the cost of overruns, if funds are available. When funds are available and Federal assistance for overruns is provided, the Government share of overruns will not exceed the cost share for the overall Project and then only up to 25 percent of the original Government contribution as specified in the initial financial assistance agreement.

#### 7.9 PROJECT PROPERTY

The decision of whether to dispose of the facility at the end of the cost shared Project or to continue operating the facility at the Participant's expense is solely the responsibility of the Participant. Proceeds from the sale of Project property may be retained by the Participant.

#### 7.10 FINANCIAL RECORDS

Participants in Cooperative Agreements are required to maintain financial records adequate to reflect the nature and extent of their costs and to ensure that the required cost participation is achieved.

#### 7.11 LIMITATION OF GOVERNMENT FINANCIAL PARTICIPATION

DOE cost sharing may be limited by the NEPA regulations at 40 C.F.R. § 1506.1 (limitation on actions during NEPA process).

APPENDIX A

CONGRESSIONAL GUIDANCE



PUBLIC LAW 102-154—NOV. 13, 1991

Public Law 102-154  
102d Congress

An Act

Making appropriations for the Department of the Interior and related agencies for the fiscal year ending September 30, 1992, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That the following sums are appropriated, out of any money in the Treasury not otherwise appropriated, for the Department of the Interior and related agencies for the fiscal year ending September 30, 1992, and for other purposes, namely:

TITLE I—DEPARTMENT OF THE INTERIOR

DEPARTMENT OF ENERGY

CLEAN COAL TECHNOLOGY

The first paragraph under this head in Public Law 101-512 is amended by striking the phrase "\$150,000,000 on October 1, 1991, \$225,000,000 on October 1, 1992" and inserting "\$100,000,000 on October 1, 1991, \$275,000,000 on October 1, 1992".

Notwithstanding the issuance date for the fifth general request for proposals under this head in Public Law 101-512, such request for proposals shall be issued not later than July 6, 1992, and notwithstanding the proviso under this head in Public Law 101-512 regarding the time interval for selection of proposals resulting from such solicitation, project proposals resulting from the fifth general request for proposals shall be selected not later than ten months after the issuance date of the fifth general request for proposals: *Provided*, That hereafter the fifth general request for proposals shall be subject to all provisos contained under this head in previous appropriations Acts unless amended by this Act.

Notwithstanding the provisos under this head in previous appropriations Acts, projects selected pursuant to the fifth general request for proposals shall advance significantly the efficiency and environmental performance of coal-using technologies and be applicable to either new or existing facilities: *Provided*, That budget periods may be used in lieu of design, construction, and operating phases for cost-sharing calculations: *Provided further*, That the Secretary shall not finance more than 50 per centum of the total costs of any budget period: *Provided further*, That project specific development activities for process performance definition, component design verification, materials selection, and evaluation of alternative designs may be funded on a cost-shared basis up to a limit of 10 per centum of the Government's share of project cost: *Provided further*, That development activities eligible for cost-sharing may include limited modifications to existing facilities for project related testing but do not include construction of new facilities.

With regard to funds made available under this head in this and previous appropriations Acts, unobligated balances excess to the needs of the procurement for which they originally were made available may be applied to other procurements for use on projects for which cooperative agreements are in place, within the limitations and proportions of Government financing increases currently allowed by law: *Provided*, That hereafter, the Department of Energy, for a period of up to five years after completion of the operations phase of a cooperative agreement may provide appropriate protections, including exemptions from subchapter II of chapter 5 of title 5, United States Code, against the dissemination of information that results from demonstration activities conducted under the Clean Coal Technology Program and that would be a trade secret or commercial or financial information that is privileged or confidential if the information had been obtained from and first produced by a non-Federal party participating in a Clean Coal Technology project: *Provided further*, That hereafter, in addition to the full-time permanent Federal employees specified in section 303 of Public Law 97-257, as amended, no less than 90 full-time Federal employees shall be assigned to the Assistant Secretary for Fossil Energy for carrying out the programs under this head using funds available under this head in this and any other appropriations Act and of which not less than 35 shall be for PETC and not less than 30 shall be for METC: *Provided further*, That hereafter reports on projects selected by the Secretary of Energy pursuant to authority granted under this heading which are received by the Speaker of the House of Representatives and the President of the Senate less than 30 legislative days prior to the end of each session of Congress shall be deemed to have met the criteria in the third proviso of the fourth paragraph under the heading "Administrative provisions, Department of Energy" in the Department of the Interior and Related Agencies Appropriations Act, 1986, as contained in Public Law 99-190, upon expiration of 30 calendar days from receipt of the report by the Speaker of the House of Representatives and the President of the Senate or at the end of the session, whichever occurs later.

This Act may be cited as the "Department of the Interior and Related Agencies Appropriations Act, 1992".

Approved November 13, 1991.

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#### LEGISLATIVE HISTORY—H.R. 2686:

HOUSE REPORTS: Nos. 102-116 (Comm. on Appropriations) and 102-256 (Comm. of Conference).

SENATE REPORTS: No. 102-122 (Comm. on Appropriations).

CONGRESSIONAL RECORD, Vol. 137 (1991):

June 24, 25, considered and passed House.

Sept. 12, 13, 16-19, considered and passed Senate, amended.

Oct. 24, House agreed to conference report; receded and concurred in certain Senate amendments, in others with amendments; and disagreed to others.

Oct. 30, 31, Senate agreed to conference report; receded and concurred in certain House amendments, in another with an amendment.

Nov. 1, House disagreed to Senate amendment. Senate receded and concurred in House amendment.

MAKING APPROPRIATIONS FOR THE DEPARTMENT OF  
THE INTERIOR AND RELATED AGENCIES, FOR THE  
FISCAL YEAR ENDING SEPTEMBER 30, 1992, AND FOR  
OTHER PURPOSES

OCTOBER 17, 1991.—Ordered to be printed

Mr. YATES, from the committee of conference, submitted the  
following

CONFERENCE REPORT

[To accompany H R. 2686]

The committee of conference on the disagreeing votes of the two Houses on the amendments of the Senate to the bill (H.R. 2686) making appropriations for the Department of the Interior and Related Agencies, for the fiscal year ending September 30, 1992, and for other purposes, having met, after full and free conference, have agreed to recommend and do recommend to their respective Houses as follows:

That the Senate recede from its amendments numbered 7, 8, 13, 17, 31, 35, 38, 42, 44, 45, 46, 49, 50, 59, 61, 67, 72, 73, 77, 78, 79, 80, 82, 90, 92, 93, 94, 99, 110, 112, 125, 132, 139, 140, 141, 146, 150, 156, 159, 160, 161, 162, 166, 177, 178, 186, 192, 200, 203, 223, and 225.

That the House recede from its disagreement to the amendments of the Senate numbered 3, 4, 5, 15, 27, 83, 84, 85, 102, 103, 104, 114, 115, 116, 117, 118, 119, 120, 147, 155, 158, 168, 169, 189, 210, 211, 220, and 221 and agree to the same.

## DEPARTMENT OF ENERGY

### CLEAN COAL TECHNOLOGY

Amendment No. 165: Reported in technical disagreement. The managers on the part of the House will offer a motion to recede and concur in the amendment of the Senate with an amendment as follows:

In lieu of the matter stricken and inserted by said amendment insert:

*Notwithstanding the issuance date for the fifth general request for proposals under this head in Public Law 101-512, such request for proposals shall be issued not later than July 6, 1992, and notwithstanding the proviso under this head in Public Law 101-512 regarding the time interval for selection of proposals resulting from such solicitation, project proposals resulting from the fifth general request for proposals shall be selected not later than ten months after the issuance date of the fifth general request for proposals: Provided, That hereafter the fifth general request for proposals*

The managers on the part of the Senate will move to concur in the amendment of the House to the amendment of the Senate.

The amendment changes the issuance date for the fifth general request for proposals to July 6, 1992 instead of March 1, 1992 as proposed by the House and August 10, 1992 as proposed by the Senate and changes the allowable length of time from issuance of the request for proposals to selection of projects to ten months. The amendment also deletes Senate proposed bill language pertaining to a sixth general request for proposals as discussed below.

The managers agree that the additional two months in the procurement process for the fifth round of proposals should include an additional month to allow for the preparation of proposals by the private sector, and up to an additional month for Department of Energy review and evaluation of proposals when compared to the process for the fourth round.

The managers have agreed to delete bill language regarding a sixth round of proposals, but agree that funding will be provided for a sixth round based on unobligated and unneeded amounts that may become available from the first five rounds. The report from the Secretary on available funds, which was originally in the Senate amendment, is still a requirement and such report should be submitted to the House and Senate Committees on Appropriations not later than May 1, 1994. Based on that report, the funding, dates and conditions for the sixth round will be included in the fiscal year 1995 appropriation.

The managers expect that the fifth solicitation will be conducted under the same general types of criteria as the fourth solicitation principally modified only (1) to include the wider range of eligible technologies or applications; (2) to adjust technical criteria to consider allowable development activities, to strengthen criteria for non-utility demonstrations, and to adjust commercial performance criteria for additional facilities and technologies with regard to aspects of general energy efficiency and environmental performance; and (3) to clarify and strengthen cost and finance criteria, particularly with regard to development activities.

Amendment No. 166: Restores House language deleted by the Senate which refers to a fifth general request for proposals. The Senate proposed language dealing with both a fifth and a sixth round.

Amendment No. 167: Reported in technical disagreement. The managers on the part of the House will offer a motion to recede and concur in the amendment of the Senate which directs the Secretary of Energy to reobligate up to \$44,000,000 from the fourth round of Clean Coal Technology proposals to a proposal ranked highest in its specific technology category by the Source Evaluation Board if other than the highest ranking project in that category was selected originally by the Secretary, and if such funds become unobligated and are sufficient to fund such project. This amendment would earmark such funds, if they become available, to a specific project not chosen in the Department of Energy selection process for the fourth round of Clean Coal Technology.

Amendment No. 168: Technical amendment which deletes House proposed punctuation and numbering as proposed by the Senate.

Amendment No. 169: Deletes House proposed language which made unobligated funds available for procurements for which requests for proposals have not yet been issued.

Amendment No. 170: Reported in technical disagreement. The managers on the part of the House will offer a motion to recede and concur in the amendment of the Senate which adds "not less than" to employment floor language for PETC as proposed by the Senate. The House had no such language.

Amendment No. 171: Reported in technical disagreement. The managers on the part of the House will offer a motion to recede and concur in the amendment of the Senate which adds "not less than" to employment floor language for METC as proposed by the Senate. The House had no such language.

DEPARTMENT OF THE INTERIOR AND RELATED  
AGENCIES APPROPRIATIONS BILL, 1992

JULY 25 (legislative day JULY 8), 1991.—Ordered to be printed

Mr. BYRD, from the Committee on Appropriations,  
submitted the following

REPORT

[To accompany H.R. 2686]

CLEAN COAL TECHNOLOGY

No new funds have been appropriated for the Clean Coal Technology Program as adequate funding has been provided, by advance, in previous appropriation acts. The Committee has not adopted the administration's ill-conceived proposal to rescind \$150,000,000 from prior appropriations for the fifth clean coal solicitation.

The fifth clean coal technology solicitation will occur in fiscal year 1992.

The Committee has included language in the bill which extends the solicitation date of the fifth round of clean coal technology projects from March 1, 1992, as presently required, to August 10, 1992. The delay will permit more appropriate spacing between the fourth and fifth solicitations.

The Committee has also included language requiring the administration to conduct a sixth clean coal technology solicitation on February 1, 1994. Funding for the solicitation would be provided from funds appropriated for, but not used in, earlier solicitations. The Secretary is directed to submit a report to the Congress on November 1, 1993, indicating what balances would be available for this sixth solicitation.

Lastly, the fifth and sixth solicitations will be conducted under the same general criteria identified under the fourth solicitation. A premium will be placed on selecting projects which have superior environmental performance, and especially enhanced efficiency.

DEPARTMENT OF THE INTERIOR AND RELATED  
AGENCIES APPROPRIATIONS BILL, 1992

JUNE 19, 1991.—Committed to the Committee of the Whole House on the State of  
the Union and ordered to be printed

Mr. YATES, from the Committee on Appropriations,  
submitted the following

REPORT

[To accompany H.R. 2686]

DEPARTMENT OF ENERGY

CLEAN COAL TECHNOLOGY

The Committee does not recommend transferring funds from the Clean Coal Technology appropriation and delaying the fifth procurement round beyond the legislated starting date of March 1, 1992, as was proposed in the budget. In the first place, responses to the fourth procurement round indicate continued high interest in the program and financial commitment to it by industry. The Committee believes that the full \$600 million government commitment will be necessary to make a fifth round successful. Secondly, Clean Air Act requirements, both in the next ten years and in the longer term make essential the development and utilization of any clean technology which will be demonstrated in a fifth procurement. Lastly, it is clear that there will be advanced technologies, both cleaner and more efficient, available in the immediate future to be proposed in a fifth procurement without delay. For all of these reasons, the Committee is committed to continuing the program on the previously legislated schedule.

Because longer term technologies need to take into account efficiency as well as environmental cleanup the Committee believes that technologies eligible for the fifth round of procurements must not be restricted to retrofit or repowering technologies, and language has been recommended expanding eligible technologies to include all which will advance efficiency, improve environmental performance, or provide new fuel forms without regard to applicability to existing facilities.

Advanced technologies may be more in need of development testing to confirm assumptions used in designing demonstration facilities than those technologies currently proposed in the clean coal program. To allow a reasonable amount of confirmatory work the Committee recommends that projects be allowed to propose cost-shared development work, to a maximum of ten percent of the government cost-share. Such government support is not expected to include construction of new facilities, although limited modification of existing facilities for explicit project-related testing would be allowed.

Several other technical changes are recommended by the Committee as follows:

- budget periods, rather than previously defined phases of design, construction, and operation, are used for cost-sharing and control purposes;
- funds excess to the needs of the procurement for which they were appropriated may be used on another procurement (a) for increased costs of executed cooperative agreements consistent with legislatively allowable increases in project costs, or (b) to add to the total funds available for an unissued procurement;
- projects for which required reports to Congress are received near the end of a session of Congress may proceed 30 calendar days after receipt of the report by Congress rather than after the usual 30 legislative day period. This provision is included to avoid unnecessary delays in projects while still providing adequate time for Congressional review, and is made permanent law in this recommendation;
- employment floors instituted in fiscal year 1991 and the provision of protection of confidential data for up to five years are made permanent.



# One Hundred First Congress of the United States of America

## AT THE SECOND SESSION

*Began and held at the City of Washington on Tuesday, the twenty-third day of January,  
one thousand nine hundred and ninety*

### En Act

Making appropriations for the Department of the Interior and related agencies for the fiscal year ending September 30, 1991, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums are appropriated, out of any money in the Treasury not otherwise appropriated, for the Department of the Interior and related agencies for the fiscal year ending September 30, 1991, and for other purposes, namely:*

#### TITLE I—DEPARTMENT OF THE INTERIOR

##### DEPARTMENT OF ENERGY

###### CLEAN COAL TECHNOLOGY

The first paragraph under this head in Public Law 101-121 is amended by striking "\$600,000,000 shall be made available on October 1, 1990, and shall remain available until expended, and \$600,000,000 shall be made available on October 1, 1991, and shall remain available until expended" and inserting "\$600,000,000 shall be made available as follows: \$35,000,000 on September 1, 1991, \$315,000,000 on October 1, 1991, and \$250,000,000 on October 1, 1992, all such sums to remain available until expended for use in conjunction with a separate general request for proposals, and \$600,000,000 shall be made available as follows: \$150,000,000 on October 1, 1991, \$225,000,000 on October 1, 1992, and \$225,000,000 on October 1, 1993, all such sums to remain available until expended for use in conjunction with a separate general request for proposals": *Provided, That these actions are taken pursuant to section 202(b)(1) of Public Law 100-119 (2 U.S.C. 909); Provided further, That a fourth general request for proposals shall be issued not later than February 1, 1991, and a fifth general request for proposals shall be issued not later than March 1, 1992; Provided further, That project proposals resulting from such solicitations shall be selected not later than eight months after the date of the general request for proposals; Provided further, That for clean coal solicitations required herein, provisions included for the repayment of government contributions to individual projects shall be identical to those included in the Program Opportunity Notice (PON) for Clean Coal Technology III (OCT-III) Demonstration Projects (solicitation number DE-PS01-89 FE 61825), issued by the Department of Energy on May 1, 1989; Provided further, That funds provided under this head in this or any other appropriations Act shall be expended only in accordance with the provisions governing the use of such funds contained under this head in this or any other appropriations Act.*

With regard to funds made available under this head in this and previous appropriations Acts, unobligated balances excess to the needs of the procurement for which they originally were made available may be applied to other procurements for use on projects for which cooperative agreements are in place, within the limitations and proportions of Government financing increases currently allowed by law: *Provided*, That the Department of Energy, for a period of up to five (5) years after completion of the operations phase of a cooperative agreement may provide appropriate protections, including exemptions from subchapter II of chapter 5 of title 5, United States Code, against the dissemination of information that results from demonstration activities conducted under the Clean Coal Technology Program and that would be a trade secret or commercial or financial information that is privileged or confidential if the information had been obtained from and first produced by a non-Federal party participating in a Clean Coal Technology project: *Provided further*, That, in addition to the full-time permanent Federal employees specified in section 803 of Public Law 97-257, as amended, no less than 90 full-time Federal employees shall be assigned to the Assistant Secretary for Fossil Energy for carrying out the programs under this head using funds available under this head in this and any other appropriations Act and of which 85 shall be for PETC and 80 shall be for METC: *Provided further*, That reports on projects selected by the Secretary of Energy pursuant to authority granted under this heading which are received by the Speaker of the House of Representatives and the President of the Senate less than 30 legislative days prior to the end of the second session of the 101st Congress shall be deemed to have met the criteria in the third proviso of the fourth paragraph under the heading "Administrative provisions, Department of Energy" in the Department of the Interior and Related Agencies Appropriations Act, 1986, as contained in Public Law 99-190, upon expiration of 30 calendar days from receipt of the report by the Speaker of the House of Representatives and the President of the Senate or at the end of the session, whichever occurs later.

101ST CONGRESS  
2d Session

HOUSE OF REPRESENTATIVES

REPORT  
101-971

MAKING APPROPRIATIONS FOR THE DEPARTMENT OF THE INTERIOR  
AND RELATED AGENCIES FOR THE FISCAL YEAR ENDING SEPTEMBER  
30, 1991, AND FOR OTHER PURPOSES

OCTOBER 27, 1990.—Ordered to be printed

Mr. YATES, from the committee of conference,  
submitted the following

CONFERENCE REPORT

[To accompany H.R. 5769]

The committee of conference on the disagreeing votes of the two Houses on the amendment of the Senate to the bill (H.R. 5769) "making appropriations for the Department of the Interior and related agencies for the fiscal year ending September 30, 1991, and for other purposes," having met, after full and free conference, have agreed to recommend and do recommend to their respective Houses as follows:

That the Senate recede from its amendments numbered 12, 16, 20, 25, 26, 28, 32, 33, 36, 38, 41, 53, 54, 56, 57, 59, 65, 66, 102, 104, 109, 120, 127, 129, 133, 134, 135, 137, 142, 143, 153, 156, 161, 177, 181, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 212, 213, 214, 218, and 222.

That the House recede from its disagreement to the amendments of the Senate numbered 2, 3, 7, 8, 18, 21, 31, 35, 39, 42, 43, 46, 60, 61, 62, 67, 68, 69, 71, 76, 77, 81, 83, 84, 85, 86, 87, 88, 111, 112, 115, 122, 123, 124, 125, 126, 132, 138, 139, 140, 141, 145, 146, 148, 150, 151, 154, 159, 162, 163, 165, 169, 172, 173, 175, 182, 184, 190, 210, 211, and 215 and agree to the same.

## DEPARTMENT OF ENERGY

## CLEAN COAL TECHNOLOGY

Amendment No. 142: Provides \$35,000,000 for clean coal technology on September 1, 1991 as proposed by the House instead of \$100,000,000 as proposed by the Senate. This amendment and Amendment No. 143 shift the availability of \$65,000,000 from fiscal year 1991 to fiscal year 1992.

Amendment No. 143: Provides \$315,000,000 for clean coal technology on October 1, 1991 as proposed by the House instead of \$250,000,000 as proposed by the Senate. This amendment and Amendment No. 142 shift the availability of \$65,000,000 from fiscal year 1991 to fiscal year 1992.

Amendment No. 144: Provides dates for two solicitations for clean coal technology as proposed by the Senate. The date for CCT-IV is amended to February 1, 1991 from January 1, 1991. The date for CCT-V is not changed from the Senate date of March 1, 1992.

The managers have agreed to a February 1, 1991 date for the next solicitation to enable the Department to publish a draft solicitation for comment by interested parties. It is expected that there will be changes to evaluation criteria and other factors that make it imperative that potential proposers have an opportunity to comment on the content of the solicitation.

The managers urge the Department to include potential benefits to remote, import-dependent sites as a program policy factor in evaluating proposals. The Department should also consider projects which can provide multiple fuel resource options for regions which are more than seventy-five percent dependent on one fuel form for total energy requirements.

Amendment No. 145: Requires selection of projects within eight months of the requests for proposals required by Amendment No. 144 as proposed by the Senate. The House had no such provision.

Amendment No. 146: Requires repayment of government contributions to projects under conditions identical to the most recent clean coal solicitation as proposed by the Senate. The House had no such provision.

Amendment No. 147: Provides that funds for clean coal technology may be expended only under conditions contained in appropriations Acts. The Senate language had prohibited geographic restrictions on the expenditure of funds. The House had no such provision. The managers direct that no preferential consideration be given to any project referenced explicitly or implicitly in other legislation.

The managers agree to delete bill language dealing with geographic restrictions based on such restrictions being deleted from clean air legislation.

Amendment No. 148: Earmarks employees to two fossil energy technology centers as proposed by the Senate. The House had no such provision. The managers agree that the earmarks for PETC and METC are minimum levels and may be increased as necessary.

The managers agree that no more than the current 30 fulltime equivalent positions from fossil energy research and development may be used in the clean coal program in fiscal year 1991.

Public Law 101-302  
101st Congress

An Act

Making dire emergency supplemental appropriations for disaster assistance, food stamps, unemployment compensation administration, and other urgent needs, and transfers, and reducing funds budgeted for military spending for the fiscal year ending September 30, 1990, and for other purposes.

May 25, 1990  
[H.R. 4404]

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That the following sums are appropriated, out of any money in the Treasury not otherwise appropriated, to provide dire emergency supplemental appropriations for the fiscal year ending September 30, 1990, and for other purposes, namely:

Dire Emergency  
Supplemental  
Appropriation  
for Disaster  
Assistance, Food  
Stamps,  
Unemployment  
Compensation  
Administration,  
and Other  
Urgent Needs,  
and Transfers,  
and Reducing  
Funds Budgeted  
for Military  
Spending Act of  
1990.

**TITLE II—SUPPLEMENTAL  
APPROPRIATIONS**

**DEPARTMENT OF ENERGY**

**CLEAN COAL TECHNOLOGY**

Funds previously appropriated under this head for clean coal technology solicitations to be issued no later than June 1, 1990, and no later than September 1, 1991, respectively, shall not be obligated until September 1, 1991: *Provided*, That the aforementioned solicitations shall not be conducted prior to the ability to obligate these funds: *Provided further*, That pursuant to section 202(b) of the Balanced Budget and Emergency Deficit Control Reaffirmation Act of 1987, this action is a necessary (but secondary) result of a significant policy change: *Provided further*, That for the clean coal solicitations identified herein, provisions included for the repayment of government contributions to individual projects shall be identical to those included in the Program Opportunity Notice (PON) for Clean Coal Technology III (CCT-III) Demonstration Projects (solicitation number DE-PSO1-89 FE 61825), issued by the Department of Energy on May 1, 1989.

## DEPARTMENT OF ENERGY

## CLEAN COAL TECHNOLOGY

For necessary expenses of, and associated with, Clean Coal Technology demonstrations pursuant to 42 U.S.C. 5901 et seq., \$600,000,000 shall be made available on October 1, 1990, and shall remain available until expended, and \$600,000,000 shall be made available on October 1, 1991, and shall remain available until expended: *Provided*, That projects selected pursuant to a separate general request for proposals issued pursuant to each of these appropriations shall demonstrate technologies capable of replacing, retrofitting or repowering existing facilities and shall be subject to all provisos contained under this head in Public Laws 99-190, 100-202, and 100-446 as amended by this Act: *Provided further*, That the general request for proposals using funds becoming available on October 1, 1990, under this paragraph shall be issued no later than June 1, 1990, and projects resulting from such a solicitation must be selected no later than February 1, 1991: *Provided further*, That the general request for proposals using funds becoming available on October 1, 1991, under this paragraph shall be issued no later than September 1, 1991, and projects resulting from such a solicitation must be selected no later than May 1, 1992.

102 Stat. 1810.

The first paragraph under this head in Public Law 100-446 is amended by striking "\$575,000,000 shall be made available on October 1, 1989" and inserting "\$450,000,000 shall be made available on October 1, 1989, and shall remain available until expended, and \$125,000,000 shall be made available on October 1, 1990": *Provided*, That these actions are taken pursuant to section 202(b)(1) of Public Law 100-119 (2 U.S.C. 909).

With regard to funds made available under this head in this and previous appropriations Acts, unobligated balances excess to the needs of the procurement for which they originally were made available may be applied to other procurements for which requests for proposals have not yet been issued: *Provided*, That for all procurements for which project selections have not been made as of the date of enactment of this Act no supplemental, backup, or contingent selection of projects shall be made over and above projects originally selected for negotiation and utilization of available funds: *Provided further*, That reports on projects selected by the Secretary of Energy pursuant to authority granted under this heading which are received by the Speaker of the House of Representatives and the President of the Senate less than 30 legislative days prior to the end of the first session of the 101st Congress shall be deemed to have met the criteria in the third proviso of the fourth paragraph under the heading "Administrative provisions, Department of Energy" in the Department of the Interior and Related Agencies Appropriations Act, 1986, as contained in Public Law 99-190, upon expiration of 30 calendar days from receipt of the report by the Speaker of the House of Representatives and the President of the Senate or at the end of the session, whichever occurs later.

Reports.

42 USC 8814  
note.

Unobligated balances available in the "Alternative fuels production" account may hereafter be used for payment of the guaranteed portion of defaulted loans and associated costs of the Department of Energy Alcohol Fuels Loan Guarantee program, subject to the determination by the Secretary of Energy that such unobligated funds are not needed for carrying out the purposes of the Alternative Fuels Production program: *Provided*, That the use of these unobligated funds for payment of defaulted loans and associated costs shall be available only for loans guaranteed prior to January 1, 1987: *Provided further*, That such funds shall be used only after the unobligated balance in the Department of Energy Alcohol Fuel Loan Guarantee reserve has been exhausted.

Contracts.

Annual appropriations made in this Act and previous Interior and Related Agencies Appropriations Acts shall be available for obligations in connection with contracts issued by the Department of Energy for supplies and services for periods not in excess of twelve months beginning at any time during the fiscal year.

## ADMINISTRATIVE PROVISIONS, DEPARTMENT OF ENERGY

Appropriations under this Act for the current fiscal year shall be available for hire of passenger motor vehicles; hire, maintenance, and operation of aircraft; purchase, repair, and cleaning of uniforms; and reimbursement to the General Services Administration for security guard services.

From appropriations under this Act, transfers of sums may be made to other agencies of the Government for the performance of work for which the appropriation is made.

None of the funds made available to the Department of Energy under this Act shall be used to implement or finance authorized price support or loan guarantee programs unless specific provision is made for such programs in an appropriations Act.

The Secretary is authorized to accept lands, buildings, equipment, and other contributions from public and private sources and to prosecute projects in cooperation with other agencies, Federal, State, private, or foreign: *Provided*, That revenues and other moneys received by or for the account of the Department of Energy or otherwise generated by sale of products in connection with projects of the Department appropriated under this Act may be retained by the Secretary of Energy, to be available until expended, and used only for plant construction, operation, costs, and payments to cost-sharing entities as provided in appropriate cost-sharing contracts or agreements: *Provided further*, That the remainder of revenues after the making of such payments shall be covered into the Treasury as miscellaneous receipts: *Provided further*, That any contract, agreement, or provision thereof entered into by the Secretary pursuant to this authority shall not be executed prior to the expiration of 30 calendar days (not including any day in which either House of Congress is not in session because of adjournment of more than three calendar days to a day certain) from the receipt by the Speaker of the House of Representatives and the President of the Senate of a full comprehensive report on such project, including the facts and circumstances relied upon in support of the proposed project.

Gifts and  
property.

contracts.  
ports.

The Secretary of Energy may transfer to the Emergency Preparedness appropriation such funds as are necessary to meet any unforeseen emergency needs from any funds available to the Department of Energy from this Act.

Notwithstanding 31 U.S.C. 3302, funds derived from the sale of assets as a result of defaulted loans made under the Department of Energy Alcohol Fuels Loan Guarantee program, or any other funds received in connection with this program, shall hereafter be credited to the Biomass Energy Development account, and shall be available solely for payment of the guaranteed portion of defaulted loans and associated costs of the Department of Energy Alcohol Fuels Loan Guarantee program for loans guaranteed prior to January 1, 1987

and.  
USC 8814  
te.



42 USC 8814  
note.

Unobligated balances available in the "Alternative fuels production" account may hereafter be used for payment of the guaranteed portion of defaulted loans and associated costs of the Department of Energy Alcohol Fuels Loan Guarantee program, subject to the determination by the Secretary of Energy that such unobligated funds are not needed for carrying out the purposes of the Alternative Fuels Production program: *Provided*, That the use of these unobligated funds for payment of defaulted loans and associated costs shall be available only for loans guaranteed prior to January 1, 1987: *Provided further*, That such funds shall be used only after the unobligated balance in the Department of Energy Alcohol Fuel Loan Guarantee reserve has been exhausted.

Contracts.

Annual appropriations made in this Act and previous Interior and Related Agencies Appropriations Acts shall be available for obligations in connection with contracts issued by the Department of Energy for supplies and services for periods not in excess of twelve months beginning at any time during the fiscal year.

MAKING APPROPRIATIONS FOR THE DEPARTMENT OF THE INTERIOR  
AND RELATED AGENCIES FOR THE FISCAL YEAR ENDING SEPTEMBER  
30, 1990, AND FOR OTHER PURPOSES

OCTOBER 2, 1989 —Ordered to be printed

Mr. YATES, from the committee of conference,  
submitted the following

CONFERENCE REPORT

[To accompany H.R. 2788]

DEPARTMENT OF ENERGY

CLEAN COAL TECHNOLOGY

Amendment No. 112: Reported in technical disagreement. The managers on the part of the House will offer a motion to recede and concur in the amendment of the Senate which adds the word "replacing" to the definition of clean coal technology. The managers agree that the inclusion of "replacing" for clean coal IV and V is intended to cover the complete replacement of an existing facility if, because of design or site specific limitations, repowering or retrofitting of the plant is not a desirable option.

Amendment No. 113: Appropriates \$450,000,000 for fiscal year 1990 for clean coal technology instead of \$500,000,000 as proposed by the House and \$325,000,000 as proposed by the Senate. This appropriation along with \$125,000,000 provided for fiscal year 1991 in Amendment 114 fully funds the third round of clean coal technology projects. The managers agree that additional manpower is required, particularly at the Department's Energy Technology Centers, in order to manage adequately the increased workload from the accumulation of active clean coal technology projects and the inclusion of additional procurements in this bill. Although a legislative floor is not included, the managers agree that at least eighty personnel will be required in addition to the approximately thirty FTE's now included in the fossil energy research and development appropriation. The managers agree further that funds from the fossil energy research and development appropriation should not be used to pay the cost of more than the equivalent FTE's paid under that account in fiscal year 1989.

**Amendment No. 114: Reported in technical disagreement. The managers on the part of the House will offer a motion to recede and concur in the amendment of the Senate with an amendment as follows:**

**In lieu of the matter stricken and inserted by said amendment, insert: *and shall remain available until expended, and \$125,000,000***

**The managers on the part of the Senate will move to concur in the amendment of the House to the amendment of the Senate. The amendment provides \$125,000,000 in fiscal year 1991 for the third clean coal technology procurement instead of \$75,000,000 as proposed by the House and \$100,000,000 as proposed by the Senate.**

**Amendment No. 115: Deletes Senate proposed appropriation of \$150,000,000 for fiscal year 1992 for clean coal technology. The House proposed no such appropriation.**

**Amendment No. 116: Restores House language stricken by the Senate which prohibits the use of supplemental, backup, or contingent project selections in clean coal technology procurements.**

**Amendment No. 117: Restores the word "further" stricken by the Senate.**

DEPARTMENT OF THE INTERIOR AND RELATED  
AGENCIES APPROPRIATIONS BILL, 1990

JULY 25 (legislative day JANUARY 3), 1989.—Ordered to be printed

Mr. BYRD, from the Committee on Appropriations,  
submitted the following

## REPORT

[To accompany H.R. 2788]

## DEPARTMENT OF ENERGY

## CLEAN COAL TECHNOLOGY

Appropriations, 1989 .....	\$190,000,000
Budget estimate, 1990 .....	710,000,000
House allowance .....	635,000,000
Committee recommendation.....	460,000,000

The Committee recommends an appropriation of \$460,000,000, a decrease of \$250,000,000 below the budget estimate and \$175,000,000 below the House allowance.

The Committee supports the full \$2,500,000,000 Federal funding level for the Clean Coal Technology Program as well as the solicitation schedule proposed in the President's amended fiscal year 1990 budget request.

The recommendation includes advanced appropriations of \$600,000,000 each for the clean coal IV and V solicitations as well as phased funding to complete the \$575,000,000 Clean Coal III Demonstration Program as planned. In order to achieve the phase funding which is displayed in the table below the Committee has rescinded \$250,000,000 in funds appropriated by advance in fiscal year 1989 and reappropriated these funds by advance for fiscal

year 1991 and fiscal year 1992. The phased funding for clean coal III is similar in nature to the congressional approach in funding clean coal II.

The Committee expects no adverse effects from this approach since the recommended funding for clean coal III will permit the Department to select the same number of projects, and to complete the technology demonstrations within the same time period, as would a single appropriation totaling \$575,000,000 for this solicitation in fiscal year 1990.

A table outlining the previous appropriations for all clean coal solicitations as well as the Committee's recommendations for future years follows:

(In millions of dollars)

	Fiscal year—							Total
	1986	1987	1988	1989	1990	1991	1992	
Clean coal								
I.....	99.4	149.1	149.1					397.6
II.....			50.0	190	135	200		575.0
III.....					575			
					-250	100	150	575.0
IV.....						600		600.0
V.....							600	600.0
Total .....	99.4	149.1	199.1	190	460	900	750	2,747.6

The Committee urges the Department to review the Clean Coal Technology Program to ensure that in the future: (1) projects selected can make a long-lasting and cost-effective reduction in acid rain precursors; (2) projects selected can be commercially deployed by the year 2003; (3) technologies selected do not depend unnecessarily on nondomestic materials; and (4) a substantial number of the projects selected utilize energy efficient technologies which, by nature, reduce CO<sub>2</sub> emissions below the level that would be released by conventional technologies to produce the same energy level.

Previously, in clean coal I, the Committee permitted the Department to use up to 25 percent of solicitation funding for new, green-field type applications of technology. Subsequent solicitations were limited to technology demonstrations which could be conducted at a new site but which, by design, must be applicable to retrofitting or repowering existing powerplants or other major coal consuming facilities. This limitation was intended to focus the demonstration program on facilities which are not regulated under the new source performance standards of the Clean Air Act of 1970. The Committee has received testimony which indicates that some utilities may elect to discontinue certain older facilities in favor of constructing new, efficient, clean coal powered generating facilities which would employ technologies that, because of their large scale or their design, are not suited to repowering existing units. The Committee does not wish to inadvertently limit the suite of options which should be developed to meet the needs of the utility and coal-using industries. Consequently, the Department may, to the degree that

it believes appropriate, select during the IV and V clean coal solicitations technologies which are not retrofitable. However, the Department is cautioned to maintain the program's basic objectives of efficient power production and reduced emissions.

DEPARTMENT OF THE INTERIOR AND RELATED  
AGENCIES APPROPRIATIONS BILL, 1990

JUNE 29, 1989.—Committed to the Committee of the Whole House on the State of  
the Union and ordered to be printed

Mr. YATES, from the Committee on Appropriations,  
submitted the following

REPORT

together with

ADDITIONAL VIEWS

[To accompany H.R. 2788]

DEPARTMENT OF ENERGY

CLEAN COAL TECHNOLOGY

The Committee recommends advance appropriations for two additional procurements of \$600,000,000 each for clean coal retrofit and repowering technology. The first procurement would be initiated in 1990 and the second would be initiated in 1991, as requested by the Administration. In view of the contemplated active consideration of clean air legislation by Congress, the Committee believes that such advance appropriations are necessary in order to assure that adequate support will be available for demonstrating advanced technologies should their use be assumed by the resulting legislation. Many of the technologies would be attractive in terms of efficiency or pollution reduction absent legislation. The Committee also recommends changing the availability of \$575,000,000 in funds made available for fiscal year 1990 in the fiscal year 1989 Appropriations Act for a third clean coal technology procurement. The recommendation would make \$500,000,000 available in fiscal year 1990, and make \$75,000,000 available in fiscal year 1991. This action, which is similar to that taken last year with regard to the second clean coal procurement, is taken solely because of budget authority limitations and, based on data provided by the Department, will have no effect on the pace of the program. That is the Committee's intent.

Response to the first two clean coal procurements indicates a high level of interest and support for the program by industry and its sponsors. Although few projects are operating at this point, most appear to be proceeding on reasonable schedules. For those projects which are experiencing difficulties the Committee urges a rapid resolution by the Department and project sponsors.

In addition to providing funding as described above, the Committee has included several provisions affecting the operation of the clean coal program. Bill language is included expressly providing for the use of funds excess to the needs of the procurement to which they originally were allocated for other procurements for which requests for proposals have not been issued. Language also is recommended prohibiting the use of backup, supplemental, or contingent project selections in procurements. The potential extended period of time projects could remain in such status and the fact that several similar procurements are expected to proceed makes such lists unnecessary, if not unwise. Projects not selected originally should compete on an unbiased basis with new projects in a subsequent procurement, rather than receiving possible preference if projects selected for negotiation fail to mature. Likewise, being on such a list could also discourage worthy projects from responding to subsequent requests for proposal. Finally, bill language is included allowing projects for which required reports to Congress are received near the end of a session of Congress to proceed 30 calendar days after receipt of the report by Congress, rather than after the usual 30 legislative day period. This provision is meant to avoid unnecessary delays in projects while still providing adequate time for Congressional review.

Current allocations for manpower in the clean coal account are for fifty-eight personnel. The Committee believes that additional personnel are necessary both in fiscal year 1989 and fiscal year 1990 based on the increasing number of active projects, and the plans for continued procurements. This additional workload would fall mainly on the Energy Technology Centers, and the Committee does not want additional manpower to be assigned from personnel currently assigned to and paid from the fossil energy research and development account. Although, the Committee is not recommending an employment floor in bill language, it expects the Department to provide adequate staffing, which is estimated to be eighty to eighty-five people by fiscal year 1990. Increased costs of personnel in fiscal year 1990 should be absorbed within the \$22,548,000 provided for operating expenses in the account. Technology transfer and program analysis contracts in headquarters should also be minimized.



## DEPARTMENT OF ENERGY

## CLEAN COAL TECHNOLOGY

For necessary expenses of, and associated with, Clean Coal Technology demonstrations pursuant to 42 U.S.C. 5901 et seq., \$575,000,000 shall be made available on October 1, 1989, and shall remain available until expended: *Provided*, That projects selected pursuant to a general request for proposals issued pursuant to this appropriation shall demonstrate technologies capable of retrofitting or repowering existing facilities and shall be subject to all provisos contained under this head in Public Laws 99-190 and 100-202 as amended by this Act.

The first paragraph under this head in Public Law 100-202 is amended by striking "and \$525,000,000 are appropriated for the fiscal year beginning October 1, 1988" and inserting "\$190,000,000 are appropriated for the fiscal year beginning October 1, 1988, and shall remain available until expended, \$135,000,000 are appropriated for the fiscal year beginning October 1, 1989, and shall remain available until expended, and \$200,000,000 are appropriated for the fiscal year beginning October 1, 1990": *Provided*, That outlays in fiscal year 1989 resulting from the use of funds appropriated under this head in Public Law 100-202, as amended by this Act, may not exceed \$15,500,000: *Provided further*, That these actions are taken pursuant to section 202(b)(1) of Public Law 100-119 (2 U.S.C. 909).

101 Stat  
1329-240

For the purposes of the sixth proviso under this head in Public Law 99-190, funds derived by the Tennessee Valley Authority from its power program are hereafter not to be precluded from qualifying as all or part of any cost-sharing requirement, except to the extent that such funds are provided by annual appropriations Acts: *Provided*, That unexpended balances of funds made available in the "Energy Security Reserve" account in the Treasury for The Clean Coal Technology Program by the Department of the Interior and Related Agencies Appropriations Act, 1986, as contained in section 101(d) of Public Law 99-190, shall be merged with this account: *Provided further*, That for the purposes of the sixth proviso in Public Law 99-190 under this heading, funds provided under section 306 of Public Law 93-32 shall be considered non-Federal: *Provided further*, That reports on projects selected by the Secretary of Energy pursuant to authority granted under the heading "Clean coal technology" in the Department of the Interior and Related Agencies Appropriations Act, 1986, as contained in Public Law 99-190, which are received by the Speaker of the House of Representatives and the President of the Senate prior to the end of the second session of the 100th Congress shall be deemed to have met the criteria in the third proviso of the fourth paragraph under the heading "Administrative provisions, Department Energy" in the Department of the Interior and Related Agencies Appropriations Act, 1986, as contained in Public Law 99-190, upon expiration of 90 calendar days from receipt of the report by the Speaker of the House of Representatives and the President of the Senate.

42 USC 5903a  
note

Reports

Joint Resolution

Making further continuing appropriations for the fiscal year 1988, and for other purposes

Dec 22, 1987  
(H.J. Res 395)

PUBLIC LAW 100-202—DEC. 22, 1987

101 STAT. 1329-240

DEPARTMENT OF ENERGY

CLEAN COAL TECHNOLOGY

For necessary expenses of, and associated with, Clean Coal Technology demonstrations pursuant to 42 U.S.C. 5901 et seq., \$50,000,000 are appropriated for the fiscal year beginning October 1, 1987, and shall remain available until expended, and \$525,000,000 are appropriated for the fiscal year beginning October 1, 1988, and shall remain available until expended.

No later than sixty days following enactment of this Act, the Secretary of Energy shall, pursuant to the Federal Nonnuclear Energy Research and Development Act of 1974 (42 U.S.C. 5901 et seq.), issue a general request for proposals for emerging clean coal technologies which are capable of retrofitting or repowering existing facilities, for which the Secretary of Energy upon review may provide financial assistance awards. Proposals under this section shall be submitted to the Department of Energy no later than ninety days after issuance of the general request for proposals required herein, and the Secretary of Energy shall make any project selections no later than one hundred and sixty days after receipt of proposals: *Provided*, That projects selected are subject to all provisos contained under this head in Public Law 99-190: *Provided further*, That pre-award costs incurred by project sponsors after selection and before signing an agreement are allowable to the extent that they are related to (1) the preparation of material requested by the Department of Energy and identified as required for the negotiation; or (2) the preparation and submission of environmental data requested by the Department of Energy to complete National Environmental Policy Act requirements for the projects: *Provided further*, That pre-award costs are to be reimbursed only upon signing of the project agreement and only in the same ratio as the cost-sharing for the total project: *Provided further*, That reports on projects selected by the Secretary of Energy pursuant to authority granted under the heading "Clean coal technology" in the Department of the Interior and Related Agencies Appropriations Act, 1986, as contained in Public Law 99-190, which are received by the Speaker of the House of Representatives and the President of the Senate prior to the end of the first session of the 100th Congress shall be deemed to have met the criteria in the third proviso of the fourth paragraph under the heading "Administrative provisions, Department of Energy" in the Department of the Interior and Related Agencies Appropriations Act, 1986, as contained in Public Law 99-190, upon expiration of 80 calendar days from receipt of the report by the Speaker of the House of Representatives and the President of the Senate.

42 USC 5903d  
note

Reports

Public Law 99-190  
99th Congress

Joint Resolution

Making further continuing appropriations for the fiscal year 1986, and for other purposes

Dec. 19, 1985  
[H.J. Res. 465]

PUBLIC LAW 99-190—DEC. 19, 1985

99 STAT. 1251

DEPARTMENT OF ENERGY

CLEAN COAL TECHNOLOGY

Within 60 days following enactment of this Act, the Secretary of Energy shall, pursuant to the Federal Nonnuclear Energy Research and Development Act of 1974 (42 U.S.C. 5901, et seq.), issue a general request for proposals for clean coal technology projects for which the Secretary of Energy upon review may provide financial assistance awards. Proposals for clean coal technology projects under this section shall be submitted to the Department of Energy within 60 days after issuance of the general request for proposals. The Secretary of Energy shall make any project selections no later than August 1, 1986: *Provided*, That the Secretary may vest fee title or other property interests acquired under cost-shared clean coal technology agreements in any entity, including the United States: *Provided further*, That the Secretary shall not finance more than 50 per centum of the total costs of a project as estimated by the Secretary as of the date of award of financial assistance: *Provided further*, That cost-sharing by project sponsors is required in each of the design, construction, and operating phases proposed to be included in a project: *Provided further*, That financial assistance for costs in excess of those estimated as of the date of award of original financial assistance may not be provided in excess of the proportion of costs borne by the Government in the original agreement and only up to 25 per centum of the original financial assistance: *Provided further*, That revenues or royalties from prospective operation of projects beyond the time considered in the award of financial assistance, or proceeds from prospective sale of the assets of the project, or revenues or royalties from replication of technology in future projects or plants are not cost-sharing for the purposes of this appropriation: *Provided further*, That other appropriated Federal funds are not cost-sharing for the purposes of this appropriation: *Provided further*, That existing facilities, equipment, and supplies, or previously expended research or development funds are not cost-sharing for the purposes of this appropriation, except as amortized, depreciated, or expensed in normal business practice.

42 USC 5903d

APPENDIX B

INTENTION TO PROPOSE FORM

APPENDIX B

INTENTION TO PROPOSE

PLEASE REVIEW THIS SOLICITATION. IN ORDER THAT DOE CAN UPDATE ITS "SOURCE LIST," PLEASE COMPLETE THE ENTRIES BELOW, AND DETACH AND RETURN THIS PAGE BY THE EARLIEST PRACTICABLE DATE.

WE

☐ DO INTEND TO SUBMIT A PROPOSAL.

☐ DO NOT INTEND TO SUBMIT A PROPOSAL FOR THE FOLLOWING REASONS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

COMPANY NAME: \_\_\_\_\_

AUTHORIZED SIGNATURE: \_\_\_\_\_

TYPED OR PRINTED NAME AND TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

RETURN THIS PAGE TO:

DEPARTMENT OF ENERGY  
OFFICE OF PLACEMENT AND ADMINISTRATION (PR-322.1)  
CONTRACT OPERATIONS DIVISION "B"  
ROOM NUMBER 1J-059  
1000 INDEPENDENCE AVENUE, S.W.  
WASHINGTON, D.C. 20585

ATTN: HERBERT D. WATKINS

PROGRAM OPPORTUNITY NOTICE NO. DE-PS01-92FE62647

FORM DOE-PO-IP-578

APPENDIX C

**PROPOSAL COVER SHEETS**

Volume I:      Qualification Proposal  
Volume II:     Demonstration Project Proposal  
Volume III:    Commercial Concept Proposal  
Volume IV:     Cost and Financing Proposal

# VOLUME I - QUALIFICATION PROPOSAL

U.S. Department of Energy  
Program Opportunity Notice  
Clean Coal Technology V

for  
DOE  
use

## PROPOSAL COVER SHEET

1. Copy Number:
2. Technology: \_\_\_\_\_
3. Project Title: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. Proposer Name(s): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. Proprietary Information : Does this submittal contain proprietary or business confidential information?

Check - yes

☐

no

☐

If the answer is YES, insert the "notice re: Restrictions or Disclosure and Use of Data" (provided in the Program Opportunity Notice) in the space below:

# VOLUME II - DEMONSTRATION PROJECT PROPOSAL

U.S. Department of Energy  
Program Opportunity Notice  
Clean Coal Technology V

for  
DOE  
use

## PROPOSAL COVER SHEET

1. Copy Number:
2. Technology: \_\_\_\_\_
3. Project Title: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. Proposer Name(s): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. Proprietary Information : Does this submittal contain proprietary or business confidential information?

Check - yes

☐

no

☐

If the answer is YES, insert the "notice re: Restrictions or Disclosure and Use of Data" (provided in the Program Opportunity Notice) in the space below:



# VOLUME III - COMMERCIAL CONCEPT PROPOSAL

U.S. Department of Energy  
Program Opportunity Notice  
Clean Coal Technology V

for  
DOE  
use

## PROPOSAL COVER SHEET

1. Copy Number:
2. Technology: \_\_\_\_\_
3. Project Title: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. Proposer Name(s): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. Proprietary Information : Does this submittal contain proprietary or business confidential information?

Check - yes

☐

no

☐

If the answer is YES, insert the "notice re: Restrictions or Disclosure and Use of Data" (provided in the Program Opportunity Notice) in the space below:

## VOLUME IV - COST AND FINANCING PROPOSAL

U.S. Department of Energy  
Program Opportunity Notice  
Clean Coal Technology V

for  
DOE  
use

☐

### PROPOSAL COVER SHEET

1. Copy Number: ☐
2. Technology: \_\_\_\_\_
3. Project Title: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. Proposer Name(s): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. Proprietary Information : Does this submittal contain proprietary or business confidential information?  

Check - yes ☐ no ☐

If the answer is YES, insert the "notice re: Restrictions or Disclosure and Use of Data" (provided in the Program Opportunity Notice) in the space below:

APPENDIX D

**QUALIFICATION CRITERIA CERTIFICATIONS**

Qualification Criterion Certification

COST SHARE PERCENTAGES

I, the undersigned authorized representative for \_\_\_\_\_  
(name of organization)

\_\_\_\_\_, for the Proposal entitled \_\_\_\_\_

\_\_\_\_\_

(Proposal title)

now being submitted to the U.S. Department of Energy for financial assistance pursuant to Program Opportunity Notice DE-PS01-92FE62647 do hereby certify that the Proposer's share of the costs involved in the proposed Demonstration Project will be at least 50 percent of the total costs of the Demonstration Project.

Furthermore, the Proposer will cost share to the extent of at least 50 percent in each of the Budget Periods.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name of Proposer

\_\_\_\_\_  
Signature of  
Authorized Representative

\_\_\_\_\_  
Typed Name and Title of  
Authorized Representative

Qualification Criterion Certification

PROJECTED REPAYMENT SCHEDULE

I, the undersigned authorized representative for \_\_\_\_\_  
(name of organization)  
\_\_\_\_\_, for the Proposal entitled \_\_\_\_\_  
\_\_\_\_\_,  
(Proposal title)

now being submitted to the U.S. Department of Energy for financial assistance pursuant to Program Opportunity Notice DE-PS01-92FE62647, do hereby certify that, if selected for negotiation of a cooperative agreement, a Repayment Agreement will be prepared for the proposed project and submitted to the Department of Energy.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name of Proposer

\_\_\_\_\_  
Signature of  
Authorized Representative

\_\_\_\_\_  
Typed Name and Title of  
Authorized Representative

**APPENDIX E**

**PUBLIC ABSTRACT FORM**

# Public Abstract

The Clean Coal Technology Program is one of the United States' largest energy initiatives. As such, it attracts considerable Congressional, media and public interest. To be responsive to these interests, the Department of Energy has prepared the following **Public Abstract** to be included as part of a proposer's submission.

The **Public Abstract** will be made available to the public shortly after the deadline for receipt of Clean Coal Technology proposals. It will be used to answer inquiries from and prepare information for members of Congress, the news media, state and local organizations and members of the public. It will *not* be used as part of the evaluation process.

Although not required for the purposes of proposal evaluation and/or selection, the **Public Abstract** does provide a way to fulfill the Department's responsibility to be responsive to public inquiries without compromising the proprietary or confidential aspects of a proposal. Each proposer, therefore, is encouraged to complete the following form as fully as possible.

Proposers are asked to photocopy the three-page form and fill in the requested information for inclusion with the proposal. If diagrams, flow sheets, or other material is necessary to explain the proposed Clean Coal Technology project, this material can be included as an attachment to the **Public Abstract** form.

# Clean Coal Technology Round V

Proposal #

Page #

(Proposer should leave blank)

## Public Abstract

Proposer (primary) name: \_\_\_\_\_

Proposer address: \_\_\_\_\_

Street

City

State Zipcode

### Team members (if any):

[Listing represents only  
participants at time of proposal,  
not necessarily final team  
membership]

Name \_\_\_\_\_ City \_\_\_\_\_ State Zipcode \_\_\_\_\_

Name \_\_\_\_\_ City \_\_\_\_\_ State Zipcode \_\_\_\_\_

Name \_\_\_\_\_ City \_\_\_\_\_ State Zipcode \_\_\_\_\_

(Use continuation sheet if needed)

Proposal title: \_\_\_\_\_

### Commercial Application:

(Check appropriate boxes)

☐

New Facilities

☐

Existing Facilities

☐

Other, specify \_\_\_\_\_

### Technology type:

☐

Electric Power Generation

☐

Industrial Process

☐

New Fuel Forms Production

☐

Other \_\_\_\_\_

Specify

☐

Precombustion cleaning

☐

Combustion or combustion modification

☐

Postcombustion gas cleanup

☐

Conversion (gasification, liquefaction, coprocessing, etc.)

☐

Other \_\_\_\_\_

Specify

### Estimated total cost of project:

(May not represent final negotiated costs)

Total estimated cost: \$ \_\_\_\_\_

Estimated DOE share: \_\_\_\_\_

Estimated private share: \_\_\_\_\_

Can be expressed either as  
estimated dollar figures or as  
approximate percentages



## Public Abstract (cont'd)

Proposal #

Page #

(Proposer should leave blank)

### Anticipated project site(s):

Location (city, county, etc.)

State Zipcode

Location

State Zipcode

Location

State Zipcode

### Type of coal to be used:

Primary

Alternate (if any)

### Size or scale of project:

Tons of coal/day input

and/or

Other (if necessary)

Megawatts,  
Barrels per day, etc.

### Duration of proposed project:

[From date of award]

(Months)

### PRIMARY CONTACT:

For additional information,  
interested parties should contact:

( )

Telephone number

Name

Position

Company

Address

City

State

Zipcode

### ALTERNATIVE CONTACT:

( )

Telephone number

Name

Position

Company

Address

City

State

Zipcode

## **Public Abstract (cont'd)**

### **Brief description of project:**

[750 words or less. Use continuation sheet if necessary]

**Proposal #**

**Page #**

(Proposer should leave blank)

APPENDIX F

PROJECT SUMMARY FORM

U.S. Department of Energy  
Program Opportunity Notice  
for  
Clean Coal Technology V  
Demonstration Projects

1.      Technology: \_\_\_\_\_
  
2.      Project Title: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
  
3.      Proposer Name(s): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
  
4.      Proposer Address: \_\_\_\_\_  
\_\_\_\_\_  
Street: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_ Zip: \_\_\_\_\_
  
5.      Primary Contact: \_\_\_\_\_  
Title: \_\_\_\_\_  
Telephone No: (    ) \_\_\_\_ - \_\_\_\_

6. Secondary Contact: \_\_\_\_\_

Title: \_\_\_\_\_

Telephone No: (    ) \_\_\_\_ - \_\_\_\_

7. Project Location: \_\_\_\_\_

\_\_\_\_\_

8. Cong. District: \_\_\_\_\_

9. Applications: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

10. Types of Coal to be Used: \_\_\_\_\_

11. Coal Source: \_\_\_\_\_

\_\_\_\_\_

12. Project Size: \_\_\_\_\_

13. Proposed Duration of Each Budget Period (in months):

Budget Period 1

Budget Period 2

Budget Period 3

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

14. Proposed Project Total Duration (in months):

\_\_\_\_\_

15-18. Estimated Total Project Costs (including both Proposer and Government):

		<u>Bud. Per. 1</u>	<u>Bud. Per. 2</u>	<u>Bud. Per. 3</u>	<u>Total</u>
					<u>Project</u>
15.	<u>Proposed Cost:</u>	\$ _____	\$ _____	\$ _____	(16) \$ _____
17.	<u>Proposer Share:</u>	____%	____%	____%	(18) ____%

19. Project Team Members:

(a) Name or Corporate Identity: \_\_\_\_\_

Street: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

(b) Name or Corporate Identity: \_\_\_\_\_

Street: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

(c) Name or Corporate Identity: \_\_\_\_\_

Street: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

(Attach a page if needed to list additional members)

**APPENDIX G**

**AUTHORIZATION**

## AUTHORIZATION CERTIFICATION

To the best of my knowledge and belief, data in this proposal consisting of this Volume I and Volumes II, III, and IV are true and correct. In addition, I certify that I am authorized to submit this proposal on behalf of \_\_\_\_\_, the proposing entity, and to commit the proposing entity \_\_\_\_\_ to comply with the assurances and certifications included in this proposal. The proposed funding for completing the preaward and Statement of Work contained in this proposal is as follows:

Federal	\$ _____	_____ %
Applicant	\$ _____	_____ %
State	\$ _____	_____ %
Local	\$ _____	_____ %
Program Income	\$ _____	_____ %
Other	\$ _____	_____ %
Total	\$ _____	_____ %

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Type Name of Proposing  
Entity

\_\_\_\_\_  
Type Name and Title of Person  
Signing This Certification

Date: \_\_\_\_\_



# APPLICATION FOR FEDERAL ASSISTANCE

<b>1. TYPE OF SUBMISSION:</b> <i>Application</i> <input type="checkbox"/> Construction <input type="checkbox"/> Non-Construction		<b>2. DATE SUBMITTED</b>		Applicant Identifier	
<i>Preapplication</i> <input type="checkbox"/> Construction <input type="checkbox"/> Non-Construction		<b>3. DATE RECEIVED BY STATE</b>		State Application Identifier	
		<b>4. DATE RECEIVED BY FEDERAL AGENCY</b>		Federal Identifier	

<b>5. APPLICANT INFORMATION</b>					
Legal Name			Organizational Unit		
Address (give city, county, state, and zip code)			Name and telephone number of the person to be contacted on matters involving this application (give area code)		
<b>6. EMPLOYER IDENTIFICATION NUMBER (EIN):</b> <div style="border: 1px solid black; width: 100px; height: 20px; margin-bottom: 5px;"></div> <div style="display: flex; justify-content: space-between;"> <span>---</span> <div style="display: flex; gap: 5px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div> </div>			<b>7. TYPE OF APPLICANT: (enter appropriate letter in box)</b> <input type="checkbox"/> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;">A State</div> <div style="width: 50%;">H Independent School Dist.</div> <div style="width: 50%;">B County</div> <div style="width: 50%;">I State Controlled Institution of Higher Learning</div> <div style="width: 50%;">C Municipal</div> <div style="width: 50%;">J Private University</div> <div style="width: 50%;">D Township</div> <div style="width: 50%;">K Indian Tribe</div> <div style="width: 50%;">E Interstate</div> <div style="width: 50%;">L Individual</div> <div style="width: 50%;">F Intermunicipal</div> <div style="width: 50%;">M Profit Organization</div> <div style="width: 50%;">G Special District</div> <div style="width: 50%;">N Other (Specify) _____</div> </div>		
<b>8. TYPE OF APPLICATION:</b> <div style="display: flex; justify-content: space-around;"> <input type="checkbox"/> New           <input type="checkbox"/> Continuation           <input type="checkbox"/> Revision         </div> If Revision, enter appropriate letter(s) in box(es) <input type="checkbox"/> <input type="checkbox"/> A Increase Award    B Decrease Award    C Increase Duration D Decrease Duration    Other (specify) _____			<b>9. NAME OF FEDERAL AGENCY:</b>  		
<b>10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER:</b> <div style="display: flex; align-items: center; gap: 10px;"> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px;"></div> </div> TITLE _____			<b>11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT:</b>  		
<b>12. AREAS AFFECTED BY PROJECT (cities, counties, states etc.)</b>  					

<b>13. PROPOSED PROJECT</b>		<b>14. CONGRESSIONAL DISTRICTS OF</b>	
Start Date	Ending Date	a Applicant	b Project

<b>15. ESTIMATED FUNDING:</b> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">a Federal</td> <td style="width: 15%;">\$</td> <td style="width: 15%;"></td> <td style="width: 15%;">.00</td> </tr> <tr> <td>b Applicant</td> <td>\$</td> <td></td> <td>.00</td> </tr> <tr> <td>c State</td> <td>\$</td> <td></td> <td>.00</td> </tr> <tr> <td>d Local</td> <td>\$</td> <td></td> <td>.00</td> </tr> <tr> <td>e Other</td> <td>\$</td> <td></td> <td>.00</td> </tr> <tr> <td>f Program Income</td> <td>\$</td> <td></td> <td>.00</td> </tr> <tr> <td>g TOTAL</td> <td>\$</td> <td></td> <td>.00</td> </tr> </table>		a Federal	\$		.00	b Applicant	\$		.00	c State	\$		.00	d Local	\$		.00	e Other	\$		.00	f Program Income	\$		.00	g TOTAL	\$		.00	<b>16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?</b> a YES THIS PREAPPLICATION APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON DATE _____ b NO <input type="checkbox"/> PROGRAM IS NOT COVERED BY E.O. 12372 <input type="checkbox"/> OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW	
a Federal	\$		.00																												
b Applicant	\$		.00																												
c State	\$		.00																												
d Local	\$		.00																												
e Other	\$		.00																												
f Program Income	\$		.00																												
g TOTAL	\$		.00																												
<b>17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?</b> <input type="checkbox"/> Yes    If "Yes," attach an explanation <input type="checkbox"/> No																															

<b>18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT. THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED</b>		
a Typed Name of Authorized Representative	b Title	c Telephone number
d Signature of Authorized Representative		e Date Signed

## INSTRUCTIONS FOR THE SF 424

This is a standard form used by applicants as a required facesheet for preapplications and applications submitted for Federal assistance. It will be used by Federal agencies to obtain applicant certification that States which have established a review and comment procedure in response to Executive Order 12372 and have selected the program to be included in their process, have been given an opportunity to review the applicant's submission.

- | Item: | Entry:   | Item: | Entry:   |
|-------|--|-------|--|
| 1.    | Self-explanatory.  | 12.   | List only the largest political entities affected (e.g., State, counties, cities).   |
| 2.    | Date application submitted to Federal agency (or State if applicable) & applicant's control number (if applicable).  | 13.   | Self-explanatory.  |
| 3.    | State use only (if applicable).  | 14.   | List the applicant's Congressional District and any District(s) affected by the program or project.  |
| 4.    | If this application is to continue or revise an existing award, enter present Federal identifier number. If for a new project, leave blank.  | 15.   | Amount requested or to be contributed during the first funding/budget period by each contributor. Value of in-kind contributions should be included on appropriate lines as applicable. If the action will result in a dollar change to an existing award, indicate <u>only</u> the amount of the change. For decreases, enclose the amounts in parentheses. If both basic and supplemental amounts are included, show breakdown on an attached sheet. For multiple program funding, use totals and show breakdown using same categories as item 15. |
| 5.    | Legal name of applicant, name of primary organizational unit which will undertake the assistance activity, complete address of the applicant, and name and telephone number of the person to contact on matters related to this application.   | 16.   | Applicants should contact the State Single Point of Contact (SPOC) for Federal Executive Order 12372 to determine whether the application is subject to the State intergovernmental review process.  |
| 6.    | Enter Employer Identification Number (EIN) as assigned by the Internal Revenue Service.  | 17.   | This question applies to the applicant organization, not the person who signs as the authorized representative. Categories of debt include delinquent audit disallowances, loans and taxes.  |
| 7.    | Enter the appropriate letter in the space provided.  | 18.   | To be signed by the authorized representative of the applicant. A copy of the governing body's authorization for you to sign this application as official representative must be on file in the applicant's office. (Certain Federal agencies may require that this authorization be submitted as part of the application.)  |
| 8.    | Check appropriate box and enter appropriate letter(s) in the space(s) provided:<br>— "New" means a new assistance award.<br>— "Continuation" means an extension for an additional funding/budget period for a project with a projected completion date.<br>— "Revision" means any change in the Federal Government's financial obligation or contingent liability from an existing obligation. |       |  |
| 9.    | Name of Federal agency from which assistance is being requested with this application.   |       |  |
| 10.   | Use the Catalog of Federal Domestic Assistance number and title of the program under which assistance is requested.  |       |  |
| 11.   | Enter a brief descriptive title of the project. If more than one program is involved, you should append an explanation on a separate sheet. If appropriate (e.g., construction or real property projects), attach a map showing project location. For preapplications, use a separate sheet to provide a summary description of this project.  |       |  |

APPENDIX H

CERTIFICATIONS

**ASSURANCES — NON-CONSTRUCTION PROGRAMS**

**Note:** Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant I certify that the applicant:

1. Has the legal authority to apply for Federal assistance, and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project costs) to ensure proper planning, management and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States, and if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§ 4728-4763) relating to prescribed standards for merit systems for programs funded under one of the nineteen statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§ 1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. § 794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§ 6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§ 523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. 290 dd-3 and 290 ee-3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. § 3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.
7. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
8. Will comply with the provisions of the Hatch Act (5 U.S.C. §§ 1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.
9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§ 276a to 276a-7), the Copeland Act (40 U.S.C. § 276c and 18 U.S.C. §§ 874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§ 327-333), regarding labor standards for federally assisted construction subagreements.

10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§ 1451 et seq.); (f) conformity of Federal actions to State (Clear Air) Implementation Plans under Section 176(c) of the Clear Air Act of 1955, as amended (42 U.S.C. § 7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended, (P.L. 93-523); and (h) protection of endangered species under the Endangered Species Act of 1973, as amended, (P.L. 93-205).
12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§ 1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. 469a-1 et seq.).
14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.
15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. 2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.
16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§ 4801 et seq.) which prohibits the use of lead based paint in construction or rehabilitation of residence structures.
17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act of 1984.
18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations and policies governing this program.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL	TITLE	
APPLICANT ORGANIZATION		DATE SUBMITTED

**CERTIFICATION REGARDING DRUG-FREE WORKPLACE REQUIREMENTS  
(FINANCIAL ASSISTANCE)**

This certification is required by the Drug-Free Workplace Act of 1988 (Pub. L.100-690, Title V, Subtitle D) and is implemented pursuant to 10 CFR 1036 Subpart F.

**ALTERNATE 1. (GRANTEES OTHER THAN INDIVIDUALS)**

**A. The grantee certifies that it will or will continue to provide a drug-free workplace by:**

- (a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;**
- (b) Establishing an ongoing drug-free awareness program to inform employees about--**
  - (1) The dangers of drug abuse in the workplace;**
  - (2) The grantee's policy of maintaining a drug-free workplace;**
  - (3) Any available drug counseling, rehabilitation, and employee assistance programs; and**
  - (4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;**
- (c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);**
- (d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will--**
  - (1) Abide by the terms of the statement; and**
  - (2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction;**
- (e) Notifying the agency in writing , within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;**

- (f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted--
- (1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or
  - (2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;
- (g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f).

B. Place of Performance. The grantee shall insert in the space provided below the site(s) for the performance of work done in connection with the specific grant: (street address, city, county, state, zip code)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
ALTERNATE II. (GRANTEES WHO ARE INDIVIDUALS).

(a) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant.

(b) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to every grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

\_\_\_\_\_  
Organization Name

\_\_\_\_\_  
Award Number

\_\_\_\_\_  
Name and Title of Authorized Representative

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

(a) Definitions. As used in this clause,

"Controlled substance" means a controlled substance in schedules I through V of section 202 of the Controlled Substances Act (21 U.S.C. 812) and as further defined in regulation at 21 CFR 1308.11 - 1308.15.

"Conviction" means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes.

"Criminal drug statute" means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, possession or use of any controlled substance.

"Drug-free workplace" means a site for the performance of work done in connection with a specific contract at which employees of the Contractor are prohibited from engaging in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance.

"Employee" means an employee of a contractor directly engaged in the performance of work under a Government contract.

"Individual" means an offeror/contractor that has no more than one employee including the offeror/contractor.

(b) The Contractor, if other than an individual shall--

(1) Publish a statement notifying such employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition;

(2) Establish a drug-free awareness program to inform such employees about--

(i) The dangers of drug abuse in the workplace;

(ii) The contractor's policy of maintaining a drug-free workplace;



(iii) Any available drug counseling, rehabilitation, and employee assistance programs; and

(iv) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(3) Provide all employees engaged in performance of the contract with a copy of the statement required by subparagraph (b)(1) of this clause;

(4) Notify such employees in the statement required by subparagraph (b)(1) of this clause, that as a condition of continued employment on this contract, the employee will--

(i) Abide by the terms of the statement; and

(ii) Notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction;

(5) Notify the contracting officer within ten (10) days after receiving notice under subdivision (b)(4)(ii) of this clause, from an employee or otherwise receiving actual notice of such conviction;

(6) Within 30 days after receiving notice under subparagraph (a)(4) of this clause of a conviction, impose the following sanctions or remedial measures on any employee who is convicted of drug abuse violations occurring in the workplace:

(i) Taking appropriate personnel action against such employee, up to and including termination; or

(ii) Require such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency.

(7) Make a good faith effort to maintain a drug-free workplace through implementation of subparagraphs (b)(1) through (b)(6) of this clause.

(c) The Contractor, if an individual, agrees by award of the contract or acceptance of a purchase order, not to engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in the performance of this contract.

(d) In addition to other remedies available to the Government, the Contractor's failure to comply with the requirements of paragraphs (b) and (c) of this clause may, pursuant to FAR 23.506, render the contractor subject to suspension of contract payments, termination of the contract for default, and suspension or debarment.

Certification Regarding  
Debarment, Suspension, and Other Responsibility Matters  
Primary Covered Transactions

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 34 CFR Part 85. Section 85.510, Participants' responsibilities. The regulations were published as Part VII of the May 26, 1988 Federal Register (pages 19160-19211).

(BEFORE COMPLETING CERTIFICATION, READ INSTRUCTIONS ON REVERSE)

- (1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
  - (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
  - (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
  - (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
  - (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- (2) Where the prospective primary participants is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Instructions for Certification

1. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

2. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department of agency's

determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such person from participation in this transaction.

3. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

4. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if at any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

5. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "Proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is being submitted for assistance in obtaining a copy of those regulations.

6. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

7. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion-Lower tier Covered Transactions," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

8. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transactions, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

10. Except for transactions authorized under paragraph 6 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

CERTIFICATION FOR CONTRACTS, GRANTS, LOANS, AND COOPERATIVE AGREEMENTS  
(DEC 1989)

The undersigned certifies, to the best of his or her knowledge and belief , that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriate funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

STATEMENT FOR LOAN GUARANTEES AND LOAN INSURANCE (DEC 1989)

The undersigned states, to the best of his or her knowledge and belief, that:

If any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard

Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Disclosure Form to Report Lobbying. (Form Attached)

---

CERTIFIED CORRECT BY:

---

Organization Name

PR/Award Number or Project Name

---

Name and Title of Authorized Representative

---

Signature

Date

OMB INTERIM FINAL RULE-NEW  
RESTRICTIONS ON LOBBYING (February 26, 1990)

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contract under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

\_\_\_\_\_  
Name of Company

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Typed Name of Signatory)

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

# DISCLOSURE OF LOBBYING ACTIVITIES

Approved by OMB  
0348-0046

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352  
(See reverse for public burden disclosure.)

<b>1. Type of Federal Action:</b> <input type="checkbox"/> a. contract <input type="checkbox"/> b. grant <input type="checkbox"/> c. cooperative agreement <input type="checkbox"/> d. loan <input type="checkbox"/> e. loan guarantee <input type="checkbox"/> f. loan insurance	<b>2. Status of Federal Action:</b> <input type="checkbox"/> a. bid/offer/application <input type="checkbox"/> b. initial award <input type="checkbox"/> c. post-award	<b>3. Report Type:</b> <input type="checkbox"/> a. initial filing <input type="checkbox"/> b. material change For Material Change Only: year _____ quarter _____ date of last report _____
<b>4. Name and Address of Reporting Entity:</b> <input type="checkbox"/> Prime <input type="checkbox"/> Subawardee Tier _____, if known:  Congressional District, if known: _____		<b>5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime:</b>  Congressional District, if known: _____
<b>6. Federal Department/Agency:</b>	<b>7. Federal Program Name/Description:</b>  CFDA Number, if applicable: _____	
<b>8. Federal Action Number, if known:</b>	<b>9. Award Amount, if known:</b> \$ _____	
<b>10. a. Name and Address of Lobbying Entity (if individual, last name, first name, MI):</b>		<b>b. Individuals Performing Services (including address if different from No. 10a) (last name, first name, MI):</b>
<small>(attach Continuation Sheet(s) SF-LLL-A, if necessary)</small>		
<b>11. Amount of Payment (check all that apply):</b> \$ _____ <input type="checkbox"/> actual <input type="checkbox"/> planned	<b>13. Type of Payment (check all that apply):</b> <input type="checkbox"/> a. retainer <input type="checkbox"/> b. one-time fee <input type="checkbox"/> c. commission <input type="checkbox"/> d. contingent fee <input type="checkbox"/> e. deferred <input type="checkbox"/> f. other; specify: _____	
<b>12. Form of Payment (check all that apply):</b> <input type="checkbox"/> a. cash <input type="checkbox"/> b. in-kind; specify: nature _____ value _____		
<b>14. Brief Description of Services Performed or to be Performed and Date(s) of Service, including officer(s), employee(s), or Member(s) contacted, for Payment Indicated in Item 11:</b>   <small>(attach Continuation Sheet(s) SF-LLL-A, if necessary)</small>		
<b>15. Continuation Sheet(s) SF-LLL-A attached:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>16. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when the transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.</b>	<b>Signature:</b> _____ <b>Print Name:</b> _____ <b>Title:</b> _____ <b>Telephone No.:</b> _____ <b>Date:</b> _____	
<b>Federal Use Only:</b>		<b>Authorized for Local Reproduction Standard Form - LLL</b>

## INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Use the SF-LLL-A Continuation Sheet for additional information if the space on the form is inadequate. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.
2. Identify the status of the covered Federal action.
3. Identify the appropriate classification of this report. If this is a followup report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.
4. Enter the full name, address, city, state and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subawardee recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.
5. If the organization filing the report in item 4 checks "Subawardee", then enter the full name, address, city, state and zip code of the prime Federal recipient. Include Congressional District, if known.
6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.
7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.
8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP-DE-90-001."
9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.
10. (a) Enter the full name, address, city, state and zip code of the lobbying entity engaged by the reporting entity identified in item 4 to influence the covered Federal action.  
(b) Enter the full names of the individual(s) performing services, and include full address if different from 10 (a). Enter Last Name, First Name, and Middle Initial (MI).
11. Enter the amount of compensation paid or reasonably expected to be paid by the reporting entity (item 4) to the lobbying entity (item 10). Indicate whether the payment has been made (actual) or will be made (planned). Check all boxes that apply. If this is a material change report, enter the cumulative amount of payment made or planned to be made.
12. Check the appropriate box(es). Check all boxes that apply. If payment is made through an in-kind contribution, specify the nature and value of the in-kind payment.
13. Check the appropriate box(es). Check all boxes that apply. If other, specify nature.
14. Provide a specific and detailed description of the services that the lobbyist has performed, or will be expected to perform, and the date(s) of any services rendered. Include all preparatory and related activity, not just time spent in actual contact with Federal officials. Identify the Federal official(s) or employee(s) contacted or the officer(s), employee(s), or Member(s) of Congress that were contacted.
15. Check whether or not a SF-LLL-A Continuation Sheet(s) is attached.
16. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, D.C. 20503.



**DISCLOSURE OF LOBBYING ACTIVITIES  
CONTINUATION SHEET**

Approved by OMB  
0340-0046

Reporting Entity: \_\_\_\_\_ Page \_\_\_\_\_ of \_\_\_\_\_



APPENDIX I

WORKSHEETS TO DESCRIBE THE  
COMMERCIAL EMBODIMENT OF PROPOSED TECHNOLOGY

## 1.0 INTRODUCTION

The Proposer should use the worksheets in Appendix I to provide information on the commercial embodiment of the proposed demonstration technology. The purpose of these worksheets is to obtain projections from the Proposer for the performance and cost of mature, commercially replicated versions of the proposed technology. Blank copies of the worksheets are provided in Section 4.0 of this Appendix. Section 3.0 gives instructions for completing the worksheets. These worksheets together with any required additional narrative should be included in Volume III of the Proposal.

## 2.0 GENERAL GUIDELINES FOR COMPLETING WORKSHEETS

The size and configuration of the commercial embodiment described in the worksheets should be consistent with the Proposer's estimate of the intended market for the technology. Performance and cost information should be provided for a mature technology. Plant performance should be described when using one of two reference coals, an Eastern bituminous or a Western subbituminous coal. (Analytical data on these two reference coals is given in Section 5.0 of this Appendix.) The reference coal type expected to find greater use in commercial replications of the proposed technology should be chosen.

The worksheets should be filled out on the basis of a complete coal-to-product process. If the Proposer's technology is not a complete coal-to-product process, it must be shown in conjunction with the additional process requirements necessary for a complete process. Retrofit or repowering technologies must be incorporated into an overall flow sheet of a reference plant that is a complete, coal-to-product process. This flow sheet may contain new or existing equipment that is not integral to the envisioned commercial product. (Retrofit technologies provide a service by reducing one or more pollutants. Repowering technologies generally involve replacing an existing power plant's aging boiler with new, fluidized-bed combustion, gasification, or other steam producing or power generating equipment.) Proposers of technologies that provide a service consisting of reducing emissions of one or more pollutants may also employ a greenfield site to illustrate their commercial embodiment.

Proposers of technologies whose major anticipated market is retrofitting or repowering existing coal-fired power plants are invited to use the plant described in Attachment A of this Appendix as part of their commercial embodiment. This reference plant is a subcritical, pulverized coal-fired plant, nominally 300-MWe in size, with no existing provision for SO<sub>2</sub> or NO<sub>x</sub> emission control. It is recognized that the interface between new and existing plant equipment makes performance and cost parameters for retrofit or repowering applications very site specific. However, DOE is providing a reference plant to facilitate its evaluation process. A Proposer may select a different reference plant if it is more appropriate for the proposed technology. If a different reference plant is selected, the Proposer should provide adequate information to define it. While a retrofit or repowering might often be part of a general refurbishment of the facility, the Proposer should not include activities that are not integral to application of its technology. The equipment specified and the resulting costs should cover only the use of the proposed technology.

For technologies that produce a product intended for use as a coal-derived fuel or feedstock at another site, the Proposer must address the expected performance and cost at the production facility in the worksheets. In addition, the Proposer may elect to present the commercial embodiment of its technology by showing the use of its principal product at a site other than the production facility. Proposers making this election must show a complete process for transforming the principal product to another higher value product such as power at the second site. A complete set of worksheets describing environmental performance, efficiency, and cost implications of use of the proposed technology must be included for both sites. In filling out Worksheet 7 giving operating cost data for the facility where the coal-derived fuel or feedstock is produced, by-product credit should be taken for all but the principal product.

If the proposed technology involves the production of a coal-derived fuel intended for use in existing coal-fired power plants, the Proposer is invited to use the reference 300-MWe power plant described in Attachment A in the analysis of the end use facility. End use facilities need not have the same product throughput as the fuel or feedstock production facility; economies of scale often dictate that one production facility serve multiple end use facilities or other markets.

### 3.0 SPECIFIC INSTRUCTIONS FOR COMPLETING WORKSHEETS

This Section provides specific guidance and instructions for completing the blank worksheets printed in Section 4.0 of this Appendix.

#### Worksheet 1: General Description of Commercial Embodiment

In Worksheet 1, Proposers must provide a general description of the commercial embodiment of the proposed technology. Proposers of retrofit or repowering technologies must show these technologies in the context of a reference plant that is a complete coal-to-product facility. Proposers of technologies that produce a product intended for use as a fuel or feedstock at another site must fill out one copy of Worksheet 1 to describe the production facility. These Proposers are not obligated to include a second site where their coal-derived fuel or feedstock is consumed. They may wish to do so, however, as part of the commercial embodiment of their technology. If they choose to define the commercial embodiment in terms of two sites, they must include a Worksheet 1 for both sites. The 300-MWe reference plant described in Attachment A may be used as a reference plant by Proposers of technologies whose intended market is retrofitting, repowering, or supplying coal-derived fuel to existing pulverized coal power plants.

#### Worksheet 2: Block Flow Diagram

On Worksheet 2, a block flow diagram showing the major plant sections in the commercial embodiment of the Demonstration Project must be provided. Retrofit or repowering technologies should show the plant after it is modified. Proposers of technologies that produce a product intended for use as a fuel or feedstock at another site must fill out one copy of Worksheet 2 to describe the production facility. A second Worksheet 2 must be filled out to describe end use facilities for the fuel or product if the commercial embodiment of the proposed technology has been described using two sites. Proposers of technologies that produce a service consisting of control of emissions must show the proposed technology integrated in a complete process for conversion of coal to a product.

The intent of Worksheet 2 is to provide sufficient information that DOE can complete a summary heat and material balance across the entire plant. At a minimum, the flow diagram should show:

- o Names of major plant sections (e.g., coal preparation, steam generation, wastewater treatment, balance of plant) .
- o Plant section numbers assigned to each section by the Proposer (e.g., 100, 200).
- o Process sequence between the major sections in the plant.
- o Principal flows between major plant sections, and major feed and effluent streams of the plant.
- o Major energy streams entering or leaving each major plant section.
- o A plant section entitled balance of plant should be included as one of the sections.

The block flow diagram must be supplemented with a second sheet giving additional information in a tabular format. Appropriate cross references to the block flow diagram should be made. In the supplemental sheet, sufficient data must be given to determine the efficiency of the entire process shown in the block flow diagram and, where applicable, that part of the process that represents the proposed technology. Flow rates, compositions, temperatures, and pressures must be given for the principal flows between major plant sections. Fuel or chemical products that are not items of commerce should be characterized in terms of their ultimate analysis, e.g., elements carbon, hydrogen, oxygen, nitrogen, and sulfur. Any other information needed to establish an energy balance, such as enthalpy of combustion of hydrocarbon products, should be given. Energy streams, e.g., electricity or heat, between plant sections must be quantified.

### Worksheet 3: Description of Major Plant Sections

On Worksheet 3, the Proposer must provide information for each of the plant sections shown on Worksheet 2. A separate copy of Worksheet 3 is to be used for each section. Where applicable, the following information is to be provided:

- o Plant section name and number using the same designation as established in Worksheet 2.
- o Process description documenting the process chemistry and reaction conditions associated with major unit operations (e.g., flue gas treatment or pressurized fluid bed combustor), or the key mechanical operation parameters (e.g., physical coal cleaning) within the section.
- o Key process design criteria such as reagent/consumable stoichiometries, process residence time data, and replacement equipment size (e.g., replacement burner capacity).
- o Process sequence if it is not apparent from Worksheet 2.
- o For retrofit or repowering technologies, modifications to existing equipment required to implement the proposed technology. (If this information is included in the main text of the Proposal, a cross-reference to the information can be provided.)

The copy of Worksheet 3 describing the Balance of Plant section should include information on the scope of this section. All major facilities needed to operate the plant (e.g., fuel unloading, utilities) need to be included within the Balance of Plant section or other appropriate plant section.

### Worksheet 4: Inventory of Environmental Impacts

On Worksheet 4, the Proposer must provide pollution emission rates for the entire process shown in Worksheet 2. The pollutants that must be addressed are listed on Worksheet 4. For air toxics, the Proposer should consider at least the materials contained in Table 1 of Attachment B of Appendix N. Information on air



toxics is only obligatory for those toxics subject to Federal or State regulation in the intended market, however. For technologies that do not produce a product from coal but rather provide emission control for one or more pollutants, indicate the pollutants that are controlled by the proposed technology in the second column of Worksheet 4. In the third column of the Worksheet, emission rates of pollutants and water consumption rates per million Btu (HHV) of the reference coal used should be given with appropriate mass flow units. For power generating technologies, also fill in Column 4 and show emission rates as lb per kWh.

A narrative should be provided for all emissions or entries that are checked in the second column of the Worksheet. Explain how emission reduction is achieved for each pollutant subject to control by the proposed technology, or give a reference to a section of the Proposal where such information can be found. If a particular pollutant is partially controlled by more than one mechanism or device, the interaction and contributions of the various control mechanisms must be explained. For technologies employing two sites to describe the commercial embodiment of the proposed technology, a Worksheet 4 must be completed for each site.

#### Worksheet 5: Installed Equipment Cost

On Worksheet 5, the Proposer must provide estimates of the installed equipment cost for each plant section listed in Worksheet 3 that contains elements of the proposed technology. The summation of costs given in Worksheet 5 will represent the installed equipment cost of the proposed technology. The equipment costs developed on this Worksheet exclude project contingencies, engineering and home office fees, allowance for funds and price escalation during construction (AFDC), startup and working capital, and initial catalyst and chemical costs. (These costs are addressed in Worksheet 6.) The methodology and assumptions used in developing the costs should be provided by the Proposer as an addendum to Worksheet 5.

As explained above, some Proposers may elect to present their commercial embodiment with inclusion of a second site where a coal-derived product produced with their technology is consumed. A Worksheet 5 must be completed for the

second site. In this Worksheet, installed equipment costs must be given for any modifications that must be made in a plant to use the coal-derived product. Examples of such equipment include new burners and storage and feed facilities for the new product. For the second site, summation of costs given in Worksheet 5 represents the installed cost of all equipment needed to retrofit the plant for use of the new coal-derived product.

The cost reporting basis for Worksheet 5 is December 1991 dollars. All costs should be adjusted using the appropriate process plant cost index factor obtained from Table 1 and the equation shown below.

$$\text{Cost Data in 1991 Base-Year} \times \frac{\text{Cost Data In Other Year} \times 359.8}{\text{Cost Factor in Other Year}}$$

TABLE 1  
Process Plant Cost Index Factors

Year	Annual Index
1980	261.2
1981	297.0
1982	314.0
1983	316.9
1984	322.7
1985	325.3
1986	318.4
1987	323.8
1988	342.5
1989	355.4
1990	357.6
1991	359.8

Note: 1991 Index is Preliminary

Directions for filling in each of the columns on Worksheet 5 are given below.

Column 1 -- Plant section numbers should correspond to section numbers used in Worksheets 2 and 3. For retrofit and repowering technologies, plant modification costs not included with any other plant section costs should be included as a separate line item.

Column 2 -- Plant section titles for Worksheet 5 should correspond to the titles used in Worksheets 2 and 3.

Column 3 -- For each plant section, unadjusted, new plant installed equipment costs should be entered in Column 3. Costs should include both direct field material and labor costs, as well as the civil engineering, structural, and architectural costs associated with the plant section. Process and utility piping as well as electrical and instrumentation should be included. Cost data should be representative of an Nth plant. However, the Proposer should explain "learning curve" economies due to factors such as design standardization or modularization used in cost estimation. Cost data from previous design studies of a similar size and scope or existing literature data can be used to establish the installed cost of each plant section.

For retrofit and repowering technologies, the costs in Column 3 should be for installation of incremental equipment and any required modification of existing equipment in the reference power plant for installation and use of the proposed technology. Cost for any new equipment used in retrofit or repowering technologies should be shown as if the equipment were installed in an entirely new, grass roots plant of the capacity shown in Worksheet 1.

Column 4 -- The developmental status of a technology affects the accuracy with which the cost of a commercial version of that technology can be estimated. In order to quantify uncertainty in the design and in project cost of commercial-scale equipment, a process contingency factor is applied to each major plant section. Table 2 provides guidelines for selecting process development contingency factors for each plant section based on the present level of development of the technology used within that section. Appropriate factors are to be listed in Column 4 of Worksheet 5.

TABLE 2  
Technology Development Status

State of Technology	Process Contingency Factor*
Process is Used Commercially	1.00
Full-Size Module Has Been Operated	1.15
Small Pilot Plant Data Available	1.25
Bench-Scale Data Available	1.50
New Concept with Limited Data	1.70

\* As a fraction of installed equipment cost.

Column 5 -- Adjusted, new plant installed equipment cost is entered in Column 5 by plant section. It is computed as the product of the unadjusted installed equipment cost (Column 3) and process contingency factor (Column 4). Values in Column 5 should be summed and entered in the space provided.

Adjustment for Retrofit/Repowering -- The retrofit/repowering difficulty factor adjusts the new plant equipment cost to reflect the additional cost associated with construction and installation activities in an existing plant. The value of this factor is 1.0 for technologies whose commercial embodiment will be built at a greenfield site. Proposers of these greenfield site technologies should enter 1.0 for this factor on Worksheet 5. The total of Column 5 is then multiplied by this factor to give the total installed equipment cost, the last entry on Worksheet 5.

Retrofit and repowering technologies use a value greater than 1.0 for the retrofit/repowering difficulty factor to reflect the "degree of difficulty" of the in-plant work. Table 3 gives factors for various retrofit/repowering technologies. Proposers should select the factor from the Table that is associated with the technology that most closely resembles a proposed retrofit/repowering technology and enter it in the space provided on Worksheet 5. The total installed equipment cost is computed by multiplying the total of Column 5 by the retrofit/repowering difficulty factor.

TABLE 4  
Retrofit/Repowering Difficulty Factors for a 300 MWe Plant

Technology Class	Retrofit/Repowering Factor
Add-On	1.5
Cold Duct	1.7
Hot Duct	1.9
In-Situ	2.1
Other Pre-Combustion	1.5
PFBC	1.5
IGCC	1.4
AFBC	1.3

#### Worksheet 6: Financial Requirement Calculation

This Worksheet develops the total capital requirement for the commercial embodiment of the proposed technology. In addition, the operating and maintenance requirement for the plant is calculated. For retrofit or repowering technologies, the incremental cost is calculated. Proposers of technologies that produce a product intended for use as a fuel or feedstock at another site must fill out one copy of Worksheet 6 to describe the production facility. An additional copy of Worksheet 6 must be filled out to describe the end use facility for the fuel or feedstock if the commercial embodiment is described using 2 sites. The methodology used in Worksheet 6 parallels an EPRI format<sup>1</sup>. Total (or incremental) capital cost, as computed by this Worksheet, includes the total installed equipment cost, general facilities, project contingency, engineering and home office fee, AFDC and price escalation, royalty allowance, preproduction costs, inventory capital, and initial catalyst and chemicals.

The total installed equipment cost, item A, is obtained from the final entry on Worksheet 5. The total plant cost, item B, consists of total installed equipment cost, general facilities, project contingency, and engineering and home office fees. The total plant cost is estimated using the following expression:

$$\text{Total Plant Cost} = 1.42 * \text{Total Installed Equipment Cost}$$

<sup>1</sup> EPRI Technical Assessment Guidelines, EPRI P-6587-L, Volume 1 (Rev. 6), 1989.

AFDC, item C, is computed by multiplying the appropriate factor from Table 4 times the total plant cost. The total plant investment, item D, is the sum of the total plant cost and AFDC.

TABLE 4  
Allowance for Funds for Interest  
And Price Escalation During Construction<sup>2</sup>

Construction Period (Years)	AFDC (Fraction of Total Plant Cost)
1	0.000
2	0.054
3	0.109
4	0.167
5	0.223
6	0.279

Items E through H consider other costs associated with start-up of the plant (royalty allowance, preproduction costs, inventory capital, and initial catalyst and chemicals). Royalty allowance is to be estimated as 0.5 percent of the installed equipment cost unless the proposed technology would not anticipate having any royalty charge for commercial applications. Preproduction costs reflect operator training, equipment checkout, plant repair and modifications during start-up, and inefficient use of fuel and other materials during plant start-up. This cost is estimated as the sum of the following items: one month fixed O&M cost; one month variable operating costs; 25 percent of full-capacity fuel cost for one month; and 2 percent of the total plant investment. The variable operating cost excludes fuel and by-product credits but includes chemicals, water and other consumables plus waste and disposal costs. Inventory capital reflects the inventory required for fuel and other consumables needed to start-up the plant. This cost is estimated as 60 days variable operating cost, excluding by-product credits. The initial cost of catalyst and chemicals contained in the process equipment at start-up is to be included in the initial catalyst and chemical cost. The total capital cost is the sum of items D, E, F, G, and H.

<sup>2</sup> Based on 5.0%/yr cost escalation and 11.5%/yr AFDC interest rate

The second part of Worksheet 6, operating and maintenance requirement, considers only fixed costs. By convention, all operating and maintenance labor and materials appear in the fixed O&M category. Total annual maintenance cost, item J, is estimated as a percentage of the replacement cost of the individual sections in the plant. The annual maintenance cost for each plant section that contains elements of the proposed technology is estimated using the expression:

$$\text{Plant Section Annual Maintenance Cost} = \text{Maintenance Factor} * \text{New Plant Installed Equipment Cost}$$

The total annual maintenance cost is obtained by summing annual maintenance costs for each plant section. Recommended maintenance factors, based on the type of processing conditions within a given section, are given in Table 5. New plant installed equipment costs by plant section are found in column 5 of Worksheet 5.

TABLE 5  
Maintenance Cost Factors

Type of Processing Conditions Within Plant Section	Annual Maintenance Factor*
Corrosive and Abrasive Slurries	0.06
Solids at High Pressure and/or High Temperature	0.04
Solids at Low Pressure and/or Low Temperature	0.04
Liquids and Gases	0.02
Utilities	0.01

\* As a fraction of installed cost.

The total annual fixed O&M cost, item L, is a function of the annual maintenance cost and the operating labor cost. Annual operating labor cost is based on the number of operators per shift. The number of operators per shift is to be entered in item K. The total annual operator hours is the product of the number of operators per shift and the number of hours per year (8760). The annual operating labor cost is the product of the operator hours and the operating labor rate per hour. The annual operating cost must be converted to MM\$. The operating labor rate is given in Table 5. The following expression is used to calculate operating labor cost, item K:

$$\text{Operating Labor Cost, MM\$} = \text{Number Operators Per Shift} * 8760 * \text{Labor Pay Rate, \$/hr} * 10^{-6}$$

The total annual fixed O&M cost is calculated from the following expression:

$$\begin{array}{lclclcl} \text{Total Annual} & = & 1.12 & * & \text{Annual Main-} & + & 1.3 & * & \text{Operating} \\ \text{Fixed O\&M} & & & & \text{tenance Cost} & & & & \text{Labor Cost} \end{array}$$

This calculation is based on the following assumptions:

- o 40 percent labor / 60 percent materials cost ratio for maintenance
- o Administrative and support labor costs equal to 30 percent of combined maintenance and operating labor costs.



TABLE 6  
Operating Cost Values<sup>1</sup>  
(1991 \$)

Item	Value/Units
OPERATING LABOR PAY RATE	\$23.00/HR
<u>Commodities:</u> All costs delivered to plant sites	
**FUELS**	
FUEL OIL (NO. 2)	\$ 0.58/GAL
FUEL OIL (NO. 6)	\$ 0.36/GAL
METHANE	\$ 2.47/1000 FT <sup>3</sup>
BITUMINOUS COAL (2.5% S, HHV=12,400 BTU/LB)	\$ 37.00/TON
SUBBITUMINOUS COAL (0.5% S, HHV=8,000 BTU/LB)	\$ 25.00/TON
**WATER/STEAM**	
CONDENSATE	\$0.77/1000 LB
RAW WATER	\$0.60/1000 GAL
COOLING WATER	\$0.16/1000 GAL
STEAM	
LOW PRESSURE (0 - 70 psia)	\$2.85/1000 LB
MEDIUM PRESSURE (70 - 250 psia)	\$3.50/1000 LB
HIGH PRESSURE (250 - 2400 psia)	\$5.30/1000 LB
**POWER**	
PARASITIC POWER	\$0.050/KWHR
INCREMENTAL REPLACEMENT POWER COST	\$0.035/KWHR
**SORBENTS/CHEMICALS**	
CATALYST (COPPER OXIDE)	\$3250.00/TON
AMMONIA	\$ 150.00/TON
LIME	\$ 55.00/TON
LIME (HYDRATED)	\$ 59.00/TON
LIMESTONE	\$ 15.00/TON
NAHCOLITE	\$ 45.00/TON
EDTA	\$ 790.00/TON
TRONA	\$ 140.00/TON
LIQUID OXYGEN	\$ 117.00/TON
ALLIED CATALYST	\$2545.00/TON
CLAUS CATALYST	\$1000.00/TON

Table 6 continued  
cont. SORBENTS/CHEMICALS

PHOSPHORIC ACID	\$ 530.00/TON
SELEXOL ABSORBENT	\$ 11.80/GAL
DIATOMACEOUS EARTH	\$ 65.00/TON
LAND	\$6500.00/ACRE
FABRIC FILTER BAGS	\$ 1.00/ft <sup>2</sup>

**\*\*WASTE DISPOSAL CHARGES\*\***

DRY SOLIDS (TRUCKED-LANDFILL)	\$ 9.29/TON
FLY ASH (TRUCKED-LANDFILL)	\$ 8.00/TON
GYPSUM (TRUCKED-LANDFILL)	\$ 4.75/TON
SLUDGE	\$ 10.00/TON

**\*\*BY-PRODUCT CREDIT\*\***

SULFUR	\$ 90.00/LONG TON
FERTILIZER <sup>2</sup>	\$ 113.00/TON
SULFURIC ACID	\$ 50.00/TON
METHANOL	\$ 0.48/GAL
AMMONIA	\$ 120.00/TON

<sup>1</sup> Any commodity should be sold for 80 percent of its "cost value"

<sup>2</sup> Due to variety and grade of fertilizer, Proposer should specify fertilizer composition and propose cost value if different from that noted above.

Worksheet 7: Variable Operating Costs

By convention, only consumed and produced commodities appear in the variable cost. Quantity and type of commodities consumed and produced in the plant are to be based on information given in Worksheet 2. Variable costs include sorbents/chemicals, water, steam, auxiliary power, and waste disposal. Table 6 provides operating unit cost values to be used in calculation of the variable operating cost. The Proposer may derive alternative estimates of variable costs if documented with supporting material. Proposers may take credit for by-products as indicated in Table 6. Any credit taken must be explained. The Proposer may identify other by-products and derive alternate by-product credits if documented with supporting material. The cost of any supplemental fuel such as gas or oil must be included. When a supplementary fuel is used, explanation

must be included as to how its use affects the feed rate of the coal that constitutes the major fuel to the process.

In Table 6, costs of coal are given as delivered to an East Central location. For the reference Eastern bituminous coal, a transportation cost of \$7.00/ton is included. For the reference Western subbituminous coal, a transportation cost of \$18.00/ton is included for transport from the Powder River basin, Wyoming. If these transportation costs are inappropriate, the Proposer is allowed to change them, but must explain the changes. Proposers that describe their commercial embodiment by means of two sites are reminded to include transportation cost for their coal-derived fuel to the second site.

#### 4.0 BLANK COPIES OF WORKSHEETS

WORKSHEET 1  
General Description of  
Commercial Embodiment of Proposed Project

PROPOSER'S NAME: \_\_\_\_\_

TECHNOLOGY DESCRIPTION: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Commercial Embodiment

- |   |       |
|---|-------|
| 1. Coal Feed Rate, tph (Basis: As Received) <sup>1</sup>  | _____ |
| 2. If This Is a Utilization Facility for a Coal-Derived Fuel or Chemical Feed Stock, Name of Principal Feed Stream, e.g., coal water slurry | _____ |
| 3. If This Is a Utilization Facility for a Coal-Derived Fuel Form or Chemical Feedstock, Flow Rate of Principal Feed Stream, tph            | _____ |
| 4. Name of Principal Product, e.g., Electricity, Coke   | _____ |
| 5. Net Output of Principal Product, e.g., MW of Electricity, tph of Coke <sup>1,2</sup>   | _____ |
| 6. Name of Major Secondary Product, if Any  | _____ |
| 7. Net Output of Secondary Product  | _____ |
| 8. Plant Annual Capacity Factor <sup>3</sup> , %  | _____ |

<sup>1</sup> Full load design conditions.

<sup>2</sup> Plant boundary fuel input to end product.

<sup>3</sup> Amount of product produced during year (accounting for planned and unplanned outages) / amount of product that could be produced if plant operated at design conditions for total year (8760 hours).

TECHNOLOGY: \_\_\_\_\_

PROPOSER'S NAME: \_\_\_\_\_

WORKSHEET 2  
Block Flow Diagram Showing Major Plant Sections

TECHNOLOGY: \_\_\_\_\_

PROPOSER'S NAME: \_\_\_\_\_

**WORKSHEET 3**  
**Description of Major Plant Sections in**  
**Block Flow Diagram on Worksheet 2**

Section Name: \_\_\_\_\_

\_\_\_\_\_

Process Description: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Key Design Criteria: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Process Sequence: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Existing Equipment Mods: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

TECHNOLOGY: \_\_\_\_\_

PROPOSER'S NAME: \_\_\_\_\_

WORKSHEET 4 Inventory of Environmental Impacts			
Pollutant	Subject to Control by Proposed Technology (Y/N)	Emission Rate per MMBtu Coal	For Power Gen. Only Emission Rate per per kWh
NO+NO <sub>2</sub> as NO <sub>2</sub>			
N <sub>2</sub> O			
SO <sub>2</sub> +SO <sub>3</sub> as SO <sub>2</sub>			
CO			
PM			
PM 10			
Air Toxics (List Separately)			
Solid Wastes/Byproducts (List Separately)			
Wastewater Streams (List Separately)			
Other Waste Streams			

Reference coal used: \_\_\_\_\_

TECHNOLOGY: \_\_\_\_\_

PROPOSER'S NAME: \_\_\_\_\_

WORKSHEET 5  
Total Installed Equipment Cost  
(December, 1991 \$)

(1)	(2)	(3)	(4)	(5)
		Unadjusted Installed Equipment Cost MMS	Process Contingency Factor	Adjusted Installed Equipment Cost MMS
Section	Plant Section Title			
100	_____	_____	_____	_____
200	_____	_____	_____	_____
300	_____	_____	_____	_____
400	_____	_____	_____	_____
500	_____	_____	_____	_____
600	_____	_____	_____	_____
700	_____	_____	_____	_____
800	_____	_____	_____	_____
900	_____	_____	_____	_____
1000	_____	_____	_____	_____
1100	_____	_____	_____	_____
1200	_____	_____	_____	_____
1300	_____	_____	_____	_____
1400	_____	_____	_____	_____
1500	_____	_____	_____	_____
Total, MMS				_____
Retrofit/Repowering Difficulty Factor				_____
Total Installed Equipment Cost, MMS				_____



TECHNOLOGY: \_\_\_\_\_

PROPOSER'S NAME: \_\_\_\_\_

WORKSHEET 6  
Capital Cost and Fixed O&M Requirements  
(December 1991 \$)

<u>Capital Item</u>	<u>Capital Requirement (MM\$)</u>
(A) Total Installed Equipment Cost (Worksheet 5)	_____
(B) Total Plant Cost	_____
(C) AFDC, Construction Interest and Price Escalation Enter construction period in years: _____	_____
(D) Total Plant Investment	_____
(E) Royalty Allowance	_____
(F) Preproduction Cost	_____
(G) Inventory Capital	_____
(H) Initial Catalyst and Chemicals	_____
(I) Total Capital Cost	_____

<u>Fixed Operating and Maintenance Item</u>	<u>O&amp;M Requirement (MM\$)</u>
(J) Total Annual Maintenance Cost	_____
(K) Annual Operating Labor Cost Enter number of operators/shift: _____	_____
(L) Annual Fixed O&M Cost	_____

TECHNOLOGY: \_\_\_\_\_

PROPOSER'S NAME: \_\_\_\_\_

WORKSHEET 7  
Variable Operating Cost at Design Conditions

<u>Commodities</u>	<u>(1)</u> <u>\$/Unit*</u>	<u>(2)</u> <u>Quantity/Hr</u>	<u>(3)</u> <u>Commodity</u> <u>Cost \$/Hr</u>
1. Fuels (e.g., Coal, Natural Gas)			
A. _____	_____	_____	_____
B. _____	_____	_____	_____
C. _____	_____	_____	_____
2. Sorbents/Chemicals (e.g., Limestone)			
A. _____	_____	_____	_____
B. _____	_____	_____	_____
C. _____	_____	_____	_____
3. Raw Water	_____	_____	_____
4. Cooling Tower Blowdown Water	_____	_____	_____
5. Steam			
A. Low Pressure (<70 psia)	_____	_____	_____
B. Medium Pressure (70 - 250 psia)	_____	_____	_____
C. High Pressure (>250 psia)	_____	_____	_____
6. Parasitic Power	_____	_____	_____
7. Waste Effluents			
A. Dry, Granular Solids	_____	_____	_____
B. Sludge	_____	_____	_____
C. Contaminated Liquids	_____	_____	_____
D. _____	_____	_____	_____
8. By-Product Credits			
A. _____	_____	_____	_____
B. _____	_____	_____	_____
C. _____	_____	_____	_____
9. Fuel Credit			
A. _____	_____	_____	_____
10. Total Variable Operating Cost, \$/Hr			_____
11. Chemical Analysis of Sorbent			

<u>Sorbent A (above)</u>		<u>Sorbent B (above)</u>		<u>Sorbent C (above)</u>	
<u>Constituent</u>	<u>Wt %</u>	<u>Constituent</u>	<u>Wt %</u>	<u>Constituent</u>	<u>Wt %</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

\* From Table 6, or the Proposer's values (with explanation and justification).

## 5.0 REFERENCE COAL ANALYSIS

### Eastern bituminous

### Western subbituminous

#### Proximate Analysis (AR Basis), % wt

Volatile Matter	30.6	31.1
Fixed Carbon	50.0	32.1
Ash	16.4	6.4
Moisture	3.0	30.4
	100.0	100.0

#### Ultimate Analysis (AR Basis), % wt

Moisture	3.0	30.4
Carbon	67.5	47.9
Hydrogen	4.6	3.4
Nitrogen	1.2	0.6
Chlorine	0.1	0.0
Sulfur	2.5	0.5
Oxygen	4.7	10.8
Ash	16.4	6.4
	100.0	100.0

#### Sulfur Forms, % wt

Pyritic	1.5	0.11
Organic	0.9	0.33
Sulfate	0.1	0.04
	2.5	0.48

#### Ash Fusion, °F

Initial Deformation	2200	2140
Softening	2275	2195
Fluid	2400	2270

#### Other Parameters

Gross Heating Value, Btu/lb (AR Basis)	12,360	8020
Grindability, Hargrove	58	64
Free Swelling Index	7.5	0

Eastern bituminousWestern subbituminousTrace Element  
Analysis, ppm

As	31	4
Be	2	0.8
Cd	0.1	0.2
Co	4	2
Cr	17	7
Hg	0.3	0.1
Mn	17	39
Ni	16	5
Pb	9	4
Sb	0.9	0.4
Se	2	1.1
V	21	not measured
Zn	22	not measured

**ATTACHMENT A OF APPENDIX I**

**REFERENCE 300 MWe POWER PLANT**

## A.1 General Description of Reference Power Plant

The reference power plant is an existing plant which is to serve as the basis for generating a base case for the proposed clean coal technology. The reference power plant is a subcritical, pulverized coal-fired plant that is nominally 300 MWe (net) in size, with no provision for SO<sub>2</sub> and NO<sub>x</sub> emission control. The reference plant design[s] described in this document is based on modifications of a conceptual design presented in a report by Argonne National Laboratory\*.

The reference plant is located in the East Central Region of the continental United States. Site conditions are given in Table 1. The power plant is 30 years old and in average condition for its age. It is intended that the proposed retrofit or repowering be a part of a general plan to extend the plant's expected operational lifetime to 60 years.

TABLE 1  
Site Conditions for Reference Plant

---

600 Feet Elevation	Dry Bulb Design Temperature, 60°F
Seismic Zone 1	Wet Bulb Design Temperature, 52°F
Pile Foundations as Required	Maximum Dry Bulb Temperature, 95°F
River Water Supply	Maximum Wet Bulb Temperature, 75°F
Rail Access	Minimum Temperature, -10°F
14.4 psia, Ambient Design Pressure	

---

\* "Design of Advanced Fossil Fuel Systems: A Study of Three Developing Technologies for Coal-Fired, Base-Load Electric Power Generation, Pulverized, Coal-Fired Power Plant with a Wet Limestone Flue Gas Desulfurization System." Prepared by Bechtel Group, Inc., For Argonne National Laboratory, Report Number ANL/FE-83-10.

Coal is delivered by unit train. Provision for a 60-day dead coal storage area is included on site. Live storage retrieval and conveyors deliver 300 tons per hour (tph) of coal to two 300 tph crushers. The crushed coal is conveyed to the distribution bins. At design conditions, the reference unit consumes 118 tph of coal; the analysis of the reference coal (a simulated Upper Freeport coal, Armstrong County, Pennsylvania) is presented in Section 5.0 of Appendix I.

The turbine throttle steam conditions are nominally 2,400 psig and 1,000°F, with 1,000°F reheat. The maximum rated capacity of the power plant could be approximately 10 percent higher than rated with the turbine throttle valves wide open and 5 percent over-pressure, if selected balance of plant equipment items were sized to accommodate this operating condition. A plot plan of the approximately 360 acre site is presented in Figure 1.

#### A.1.1 Power Plant Equipment

Arrangement drawings, Figures 2, 3, and 4, show the major equipment location within modules in the reference plant. Table 3 provides data on the mechanical equipment in the plant. The following descriptions provide additional detail for major plant modules.

The turbine-generator module is in good condition and does not need refurbishment. It is located in a fully enclosed 96 by 190 foot structure containing the turbine generator and its related equipment. An auxiliary bay runs the length of the building. A bay at the front end of the turbine generator accommodates main steam and reheat piping. A bay at the generator end permits generator rotor removal. The turbine building is approximately 100 feet high.

Superheated steam for the turbine-generator is supplied by a drum-type, forced-circulation, balanced-draft, dry-bottom boiler designed for operation using pulverized coal with startup on light fuel oil. The enclosure of the boiler is designed with the water-cooled walls. The unit contains 19 horizontally-opposed, wall-fired burners. Each burner's capacity is 180 million Btu/hr. The plan area heat release rate (the amount of heat generated per square foot of boiler plan area at the upper fuel burner level) is 1.5 million Btu/hr.-ft<sup>2</sup>. The upper furnace gas residence time is 0.8 seconds.

Ducts between the air heater and the electrostatic precipitator (ESP) are sized for a gas velocity of 3,600 fpm. Gas residence time in this ductwork and the ESP manifold is 1.5 seconds. The reference plant stack is 600 feet in height and consists of a concrete chimney with an acid brick liner.

Bays on either side of the boiler contain coal silos, feeders, and pulverizers. The remaining space is reserved for the boiler, combustion air ducts, and coal pipes. Space at the back of the boiler is reserved for the boiler-to-air heater duct transition and for the air preheaters above the fan room containing the forced draft and primary air fans.

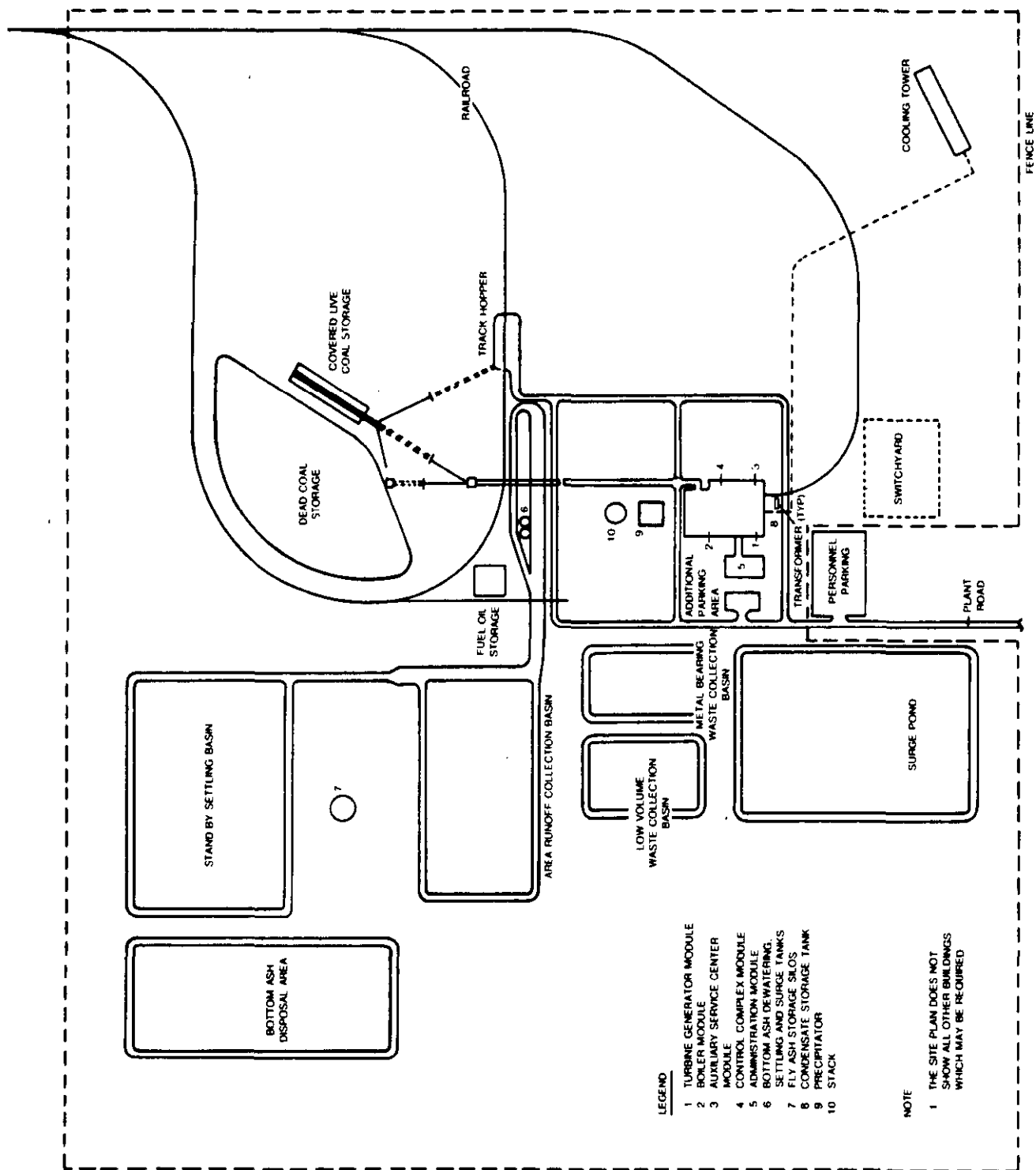
Five, 48 tph coal pulverizers are on the ground floor, three on each side of the boiler. Gravimetric-type coal feeders are on the feeder floor above the coal pulverizers. The coal silos are above the coal feeders. Each silo feeds one pulverizer. The coal conveyors are above the silos. A gallery housing the surge bin and the feed conveyors is located behind the boiler above the ducts in the duct transition bay.

The bottom ash hopper is on the ground floor under the boiler. The pulverizer reject-storage tank and transfer tanks are also on the ground floor, underneath the heat recovery section of the boiler. The economizer ash collection tank is located directly under the economizer hoppers. Bottom ash handling pumps, ash sluice water booster pumps, and ash sump pumps are on the ground floor near the ash storage and transfer tanks.

The following equipment is located within the water treatment module: domestic water treatment system, makeup demineralizer, raw water pretreatment system, wastewater treatment plant, offices and laboratory, and sewage treatment system.

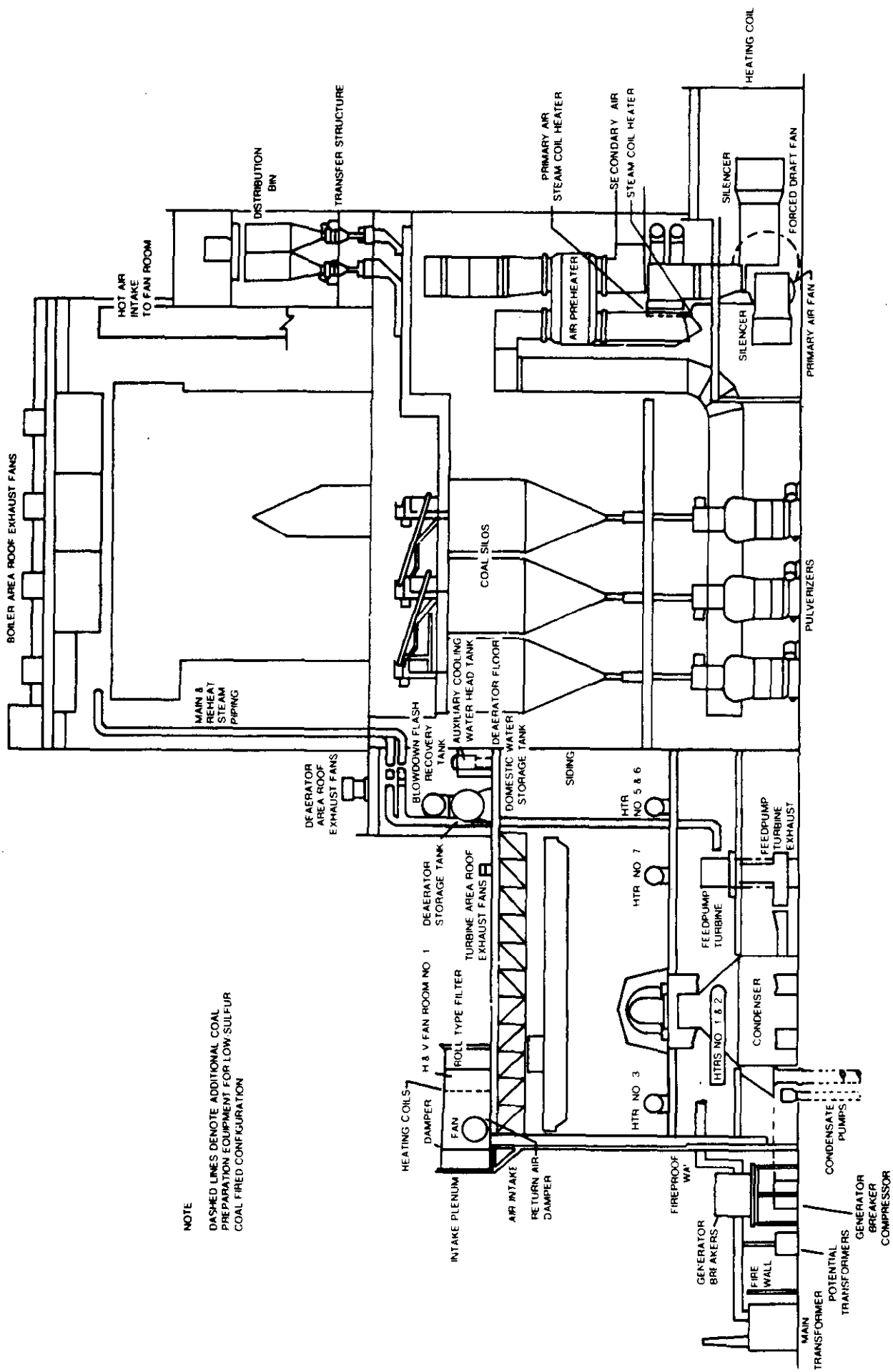
The electrostatic precipitator (ESP) module contains all of the equipment necessary to operate the cold, rigid frame ESP. Particulate emissions are controlled to 0.10 lb/MMBtu.





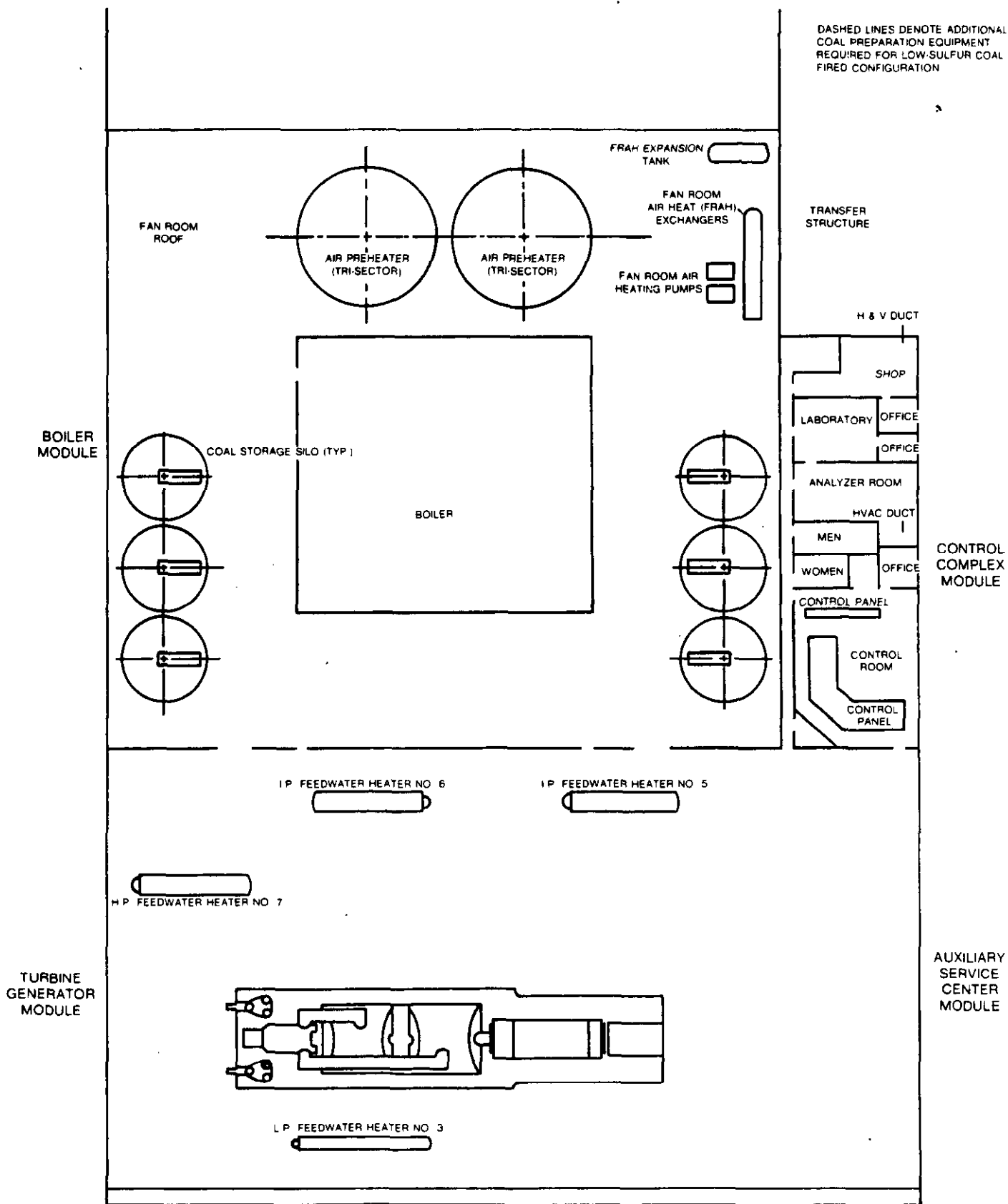
M92001135

Figure 1. Reference Plant Site Plan



M92001136

Figure 2. Reference Plant Arrangement Elevation



M92001137

Figure 3. Reference Plant Arrangement Plan Operating and Feeder Floor

NOTE

DASHED LINES DENOTE ADDITIONAL  
COAL PREPARATION EQUIPMENT  
REQUIRED FOR LOW SULFUR COAL  
FIRE CONFIGURATION

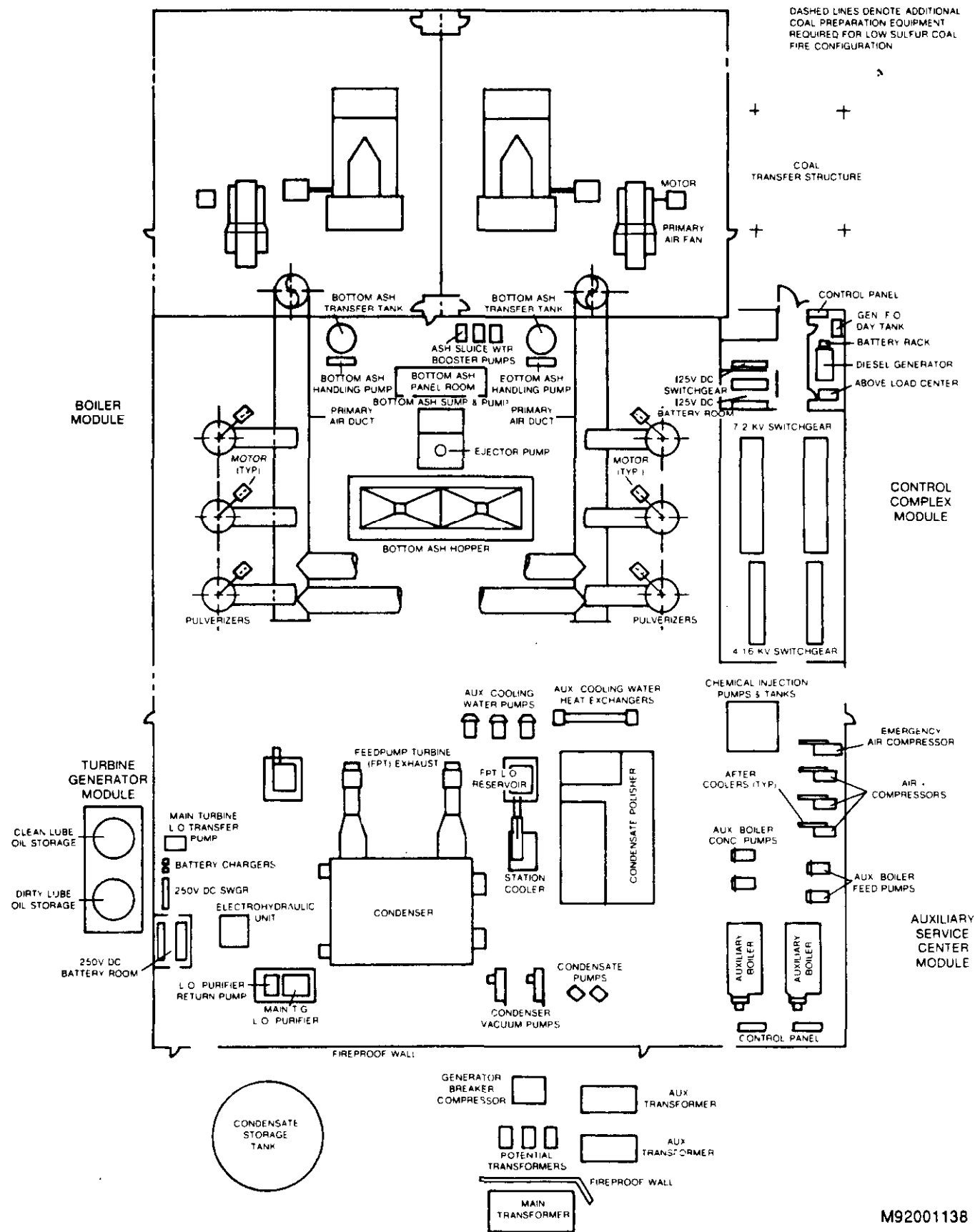


Figure 4. Reference Plant Arrangement Plan  
Ground Floor

M92001138

TABLE 3  
Reference Plant Mechanical Equipment Data

<u>Steam Generator</u>		<u>Condenser</u>	
Type	Balanced draft, direct fired, pulverized coal.	Shells	2
		Surface - (Ft <sup>2</sup> )	141,000
		<u>Feedwater Heaters</u>	
Main steam - (10 <sup>3</sup> lb/hr)	1,813	Number of stages	7 stages,
- (psig/°F)	2,520/1,005		6 closed,
Reheat - (10 <sup>3</sup> lb/hr)	1,668		1 open
- (°F)	1,005		
<u>Turbine Generator</u>		<u>Boiler Feedwater Pumps</u>	
Frame size, last stage blade	25"	Number/driver	2/turbine
Generator rating - (MVA/PF)	380/0.85	Total HP - (both)	10,500
Exhaust	2.0" HgA	Flow ea - (GPM/%)	3,000/50
Rated Capacity, Net/Gross(MW)	306/322	<u>Circulating Water</u>	
<u>Auxiliary Boiler</u>		Total flow - (GPM)	110,000
No./type/fuel	1/package/ No. 2 oil	Cooling source	Cooling Towers
Design rating - (10 <sup>3</sup> lb/hr)	100	Ambient temp./degree rise - (°F)	60/30
- (psig/°F)	150/500	No. pumps/HP	2/1,500
<u>Fans</u>		<u>Precipitator</u>	
Forced draft - (No./driver)	2/motor	Type:	Electrostatic
Primary air - (No./driver)	2/motor	Emissions (lb/MM Btu)	0.10
Induced draft - (No./driver)	2/motor	Specific Collector Area-(Ft <sup>2</sup> /1000 ACFM)	200
<u>Coal-Handling Facilities</u>		<u>Main Power Transformers</u>	
Type	Rotary dump	Number/type (ea/No. phases)	4/1 (1-spares)
Unloading rate -(No.Belts/ tph)	1/3,000	MVA/Temp Rise	380/65°F
Reclaiming rate - (No. belts/tph)	3/200	Voltage - kV/kV	24/345
<u>Ash-Handling Facilities</u>		<u>Switchyard</u>	
Bottom ash unloading - tph	5	Breakers - No.	6
Storage	Dewatering pond	Size - kV	345
Fly ash unloading - tph	20		
Storage	Silo		

### A.1.2 Plant Performance Assumptions

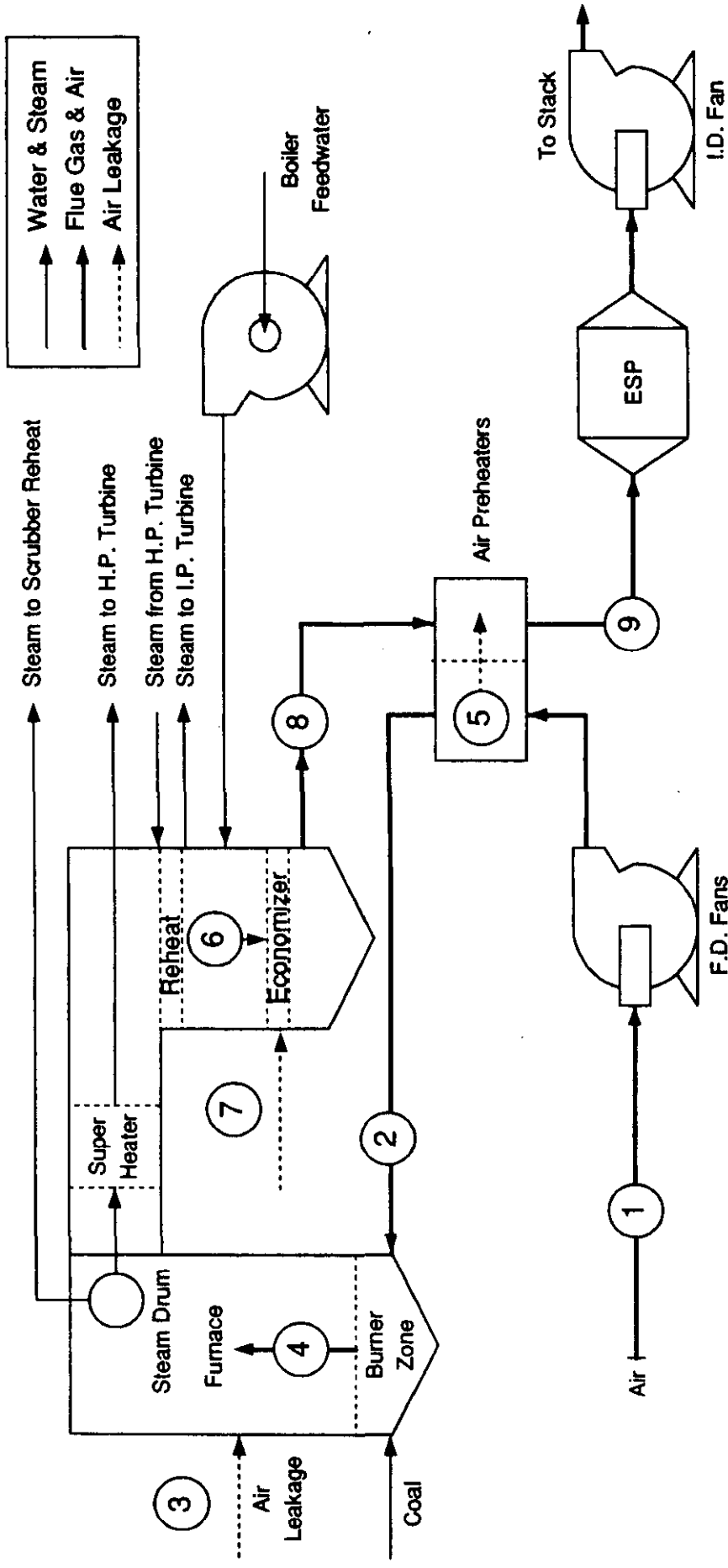
Overall performance parameters for the reference power plant are given in Table 3. The net plant heat rate includes an allowance of 6 percent for plant auxiliaries. The addition of a clean coal technology may result in a change in the net plant electrical output due to the consumption or production of power and steam. Similarly, the reference plant availability factor of 75 percent may change as a result of retrofit/repowering due to changes in both plant reliability and scheduled maintenance periods. The reference power plant boiler is uncontrolled with regard to SO<sub>2</sub> and NO<sub>x</sub> emissions. It is assumed that 95 percent of the coal sulfur is converted to SO<sub>2</sub> resulting in emissions of 3.8 lb. SO<sub>2</sub>/MM Btu. Conventional, wall-fired burners are utilized with no combustion modifications for NO<sub>x</sub> reduction. Total NO<sub>x</sub> emissions (as NO<sub>2</sub>) are 1.2 lb/MMBtu. A schematic of the flue gas flow through the boiler at full load design conditions is shown in Figure 5. Ash flow rates are shown in Table 4. In Table 5, flue gas compositions are given at two different locations in the boiler ductwork. The molecular weight of the flue gas is 29.7.

TABLE 3  
Reference Power Plant Performance Parameters

Steam Cycle Heat Rate, Btu/kWh	7,914
Boiler Efficiency, %	87.7
Gross Heat Rate, Btu/kWh	9,024
Net Heat Rate, Btu/kWh	9,493
Coal Burn Rate, tph	117.6
Net Output, MWe	305.7

TABLE 4  
Reference Power Plant Ash Flow Rates (Dry Basis)

	<u>Tons Per Hour</u>
Furnace Bottom Ash	3.84
Economizer Ash	1.44
Mill Rejects (Pyrites)	0.24
Fly Ash	<u>13.68</u>
Total	19.20



STREAM NUMBER	1	2	3	4	5	6	7	8	9
Temperature, °F	80	550	80	1800	80	1050	80	725	304
Pressure, in. WG	0.0	+0.6	0.0	-0.1	0.0	-5.0	0.0	-8.5	-11.5
MSCFM	599	550	11	585	49	597	9	606	655
MACFM	622	1069	12	2545	50	1733	10	1381	962
% Oxygen; by volume	21	21	21	2.7	21	3.1	21	3.2	4.5
% Excess Air	26	16	-	16	-	19	-	20	30
Solids, klb/hr	-	-	-	30.8	-	30.8	-	27.8	27.8

Standard Conditions  
 60 °F, 14.69 PSIA  
Ambient Conditions  
 14.4 PSIA  
 60% R. H.  
 (0.013 lb H<sub>2</sub>O / lb Dry Air)

Figure 5. Schematic Flow Sheet of Nominal 300 MW Reference Plant M92001134

TABLE 5  
Reference Power Plant  
Flue Gas Composition

	<u>At Economizer Outlet</u>		<u>At Air Heater Outlet</u>	
	<u>% - Volume</u>	<u>lb/hr</u>	<u>% - Volume</u>	<u>lb/hr</u>
O <sub>2</sub>	3.2	99,600	4.5	150,120
CO <sub>2</sub>	13.8	582,000	12.8	582,000
H <sub>2</sub> O	8.0	138,360	7.6	141,180
N <sub>2</sub>	74.7	2,003,940	74.9	2,170,980
	<u>PPM</u>	<u>lb/hr</u>	<u>PPM</u>	<u>lb/hr</u>
SO <sub>2</sub>	1,803	11,040	1,669	11,040
SO <sub>3</sub>	19	148	18	148
HCl	67	235	62	235
NO	752	2,160	696	2,160
NO <sub>2</sub>	40	175	37	175
Total		2,837,658		3,058,038



## APPENDIX J

### **INFORMATION REQUIREMENTS FOR THE NATIONAL ENVIRONMENTAL POLICY ACT**

NOTE: The information described in this Appendix need not be submitted with the Proposal.

This Appendix is intended for the Proposer's information to assist with planning the Project. The information discussed herein will be required after selection.

## Information Requirements for the National Environmental Policy Act

The Participant shall develop and deliver to DOE a detailed, self-contained Environmental Information Volume (EIV) describing the environmental aspects and projected impacts of the Project. This information is necessary in order for DOE to fulfill its responsibilities under the National Environmental Policy Act of 1969 (NEPA). In meeting those responsibilities, DOE is required to conform to the Council on Environmental Quality's regulations for Implementing the Procedural Provisions of the National Environmental Policy Act, 40 C.F.R. Parts 1500 through 1508, and DOE Regulations for implementation of NEPA (10 C.F.R. Part 1021). It should be noted that DOE's NEPA responsibilities must be fulfilled before it can share Project costs beyond Phase I Project activities. To minimize the risk of Project delays, therefore, it is imperative that the Participant consider carefully the effort and schedule required to prepare the EIV described herein.

This Appendix is intended to provide guidance to the Participant concerning the types and extent of information required, but it is not to be interpreted as containing all necessary or sufficient requirements for any given project. In some cases, the guidance may not be applicable to the Participant's Project while, in other cases, the detail given may not be sufficient to cover all applicable environmental, health, safety, and socioeconomic impacts.

Project specific guidance will be provided by DOE in the post-selection period to each Participant. The level of information should be compatible with the nature of the Project, its stage of development, and the complexity and scope of the environmental impacts. The Participant should keep in mind that the environmental information must be sufficient for DOE to prepare the appropriate documentation necessary to fulfill its obligation under NEPA to fully consider the environmental impacts that can be foreseen as a consequence of any particular project.

Guidelines for the structure and content of the EIV are shown below. The EIV should address all of the following elements. Where specific subtopics are not relevant to the Project, it should be so stated under that topic in the EIV.

## EXECUTIVE SUMMARY

The Participant should prepare a brief summary which provides the following types of information.

- o A description of the proposed action and a brief historical overview.
- o A description of alternatives to the proposed action.
- o A description of the potential beneficial and detrimental environmental, health, safety, and socioeconomic impacts that will result from the proposed action. This description should include potential issues related to currently unquantifiable effluents/emissions that may affect the validity of the impact analysis.
- o A discussion and evaluation of the major environmental, health, safety, and socioeconomic risks associated with the construction, operation, maintenance, and dismantling/ disposing, if applicable, of proposed facilities that are described in the proposed action.
- o A summary assessment of the severity of predicted environmental, health, safety, and socioeconomic effects, and a discussion of unresolved environmental, health, safety, and socioeconomic issues.
- o Alternatives available for meeting Federal, State and local regulations, and for mitigating impacts.

### 1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

This section should describe both the objectives and need for the proposed action. Note, all of the actions to be considered here have as their general objective the need to develop technologies that have technical, economic, and/or environmental advantages compared with their commercial alternatives. The manner in which the proposed Project meets these objectives should be

discussed in this section. Both the purpose of the proposed action and the manner in which the proposed action meets general objectives should be clearly presented.

## 2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

This section should provide a discussion of the proposed action and the alternatives to the proposed action that have been considered. The depth to which these actions need to be discussed should be dictated by the size, sensitivity and complexity of the proposed action. DOE has basically two alternatives available relative to each proposed Project. To fund the Project or to not fund the Project. At a minimum, the following three alternatives need to be addressed.

- o The proposed action (assuming DOE funding).
- o At least one reasonable alternative to the proposed action (assuming no DOE funding).
- o No action (no funding and everything remains status quo).

Some of the topics which may need to be discussed in the EIV are listed below. If certain topics are not relevant to the decision making process for the proposed action and its alternatives, those topics need not be discussed in the EIV and should be so noted as not applicable. Relevant topics include the following:

- o Overall plant site(s) including maps and diagrams, as appropriate. The portion of site currently occupied by Project activities, and proposed new additions.
- o Zoning designations of the site and surrounding area. Borders of the Project site.
- o For facilities requiring construction, process flow diagrams, plan and elevation views as well as sizes and capacities of major equipment.

- o A non-detailed Project schedule and a summary of test plans.
- o Project resource requirements, including energy form and quantity, land, water, labor requirements (both during construction and operation), materials needed, and anticipated process residuals if anticipated. This information should be presented both qualitatively and quantitatively.
- o The quantities and types of materials to be used in the Project including feedstocks, utilities, fuels, reactants, and products.
- o Potential transportation corridors and access (including rail, road, barge, etc.).
- o Available or projected pipelines and/or transmission lines.
- o Fuel and waste storage areas including existing or projected waste treatment disposal or recycling/ reuse facilities.
- o Plans for disposition/utilization once the demonstration period has been completed.

Coincident with the presentation of these topics, a comparative analysis should be presented of the proposed action and the reasonable alternatives. This analysis should provide both quantitative data (in tabular form) and qualitative information. Alternatives should be rigorously explored and objectively evaluated in this section.

### 3.0 AFFECTED ENVIRONMENT

The site, surrounding area, and potentially affected environment needs to be clearly described in this section. The following general types of information should be discussed in this portion of the document, if applicable.

- o General description of the area, terrain, waterways, wetlands, drainage areas, runoff areas and meteorology.

- o Ambient air quality, visibility in Class I areas, and subsurface groundwater quality.
- o Discuss the flora and fauna (terrestrial and aquatic) of the area and provide information regarding threatened or endangered species in the area.
- o Describe land use for areas surrounding the proposed Project site (e.g., structures, farmland, industrial, residential areas and potentially impacted lake/river uses).
- o Note any surrounding areas which may be environmentally or noise sensitive to the proposed Project (e.g., National Parks or wild life refuges, schools, and hospitals).

#### 4.0 ENVIRONMENTAL CONSEQUENCES

The environmental consequences of the proposed action (and alternatives) need to be addressed. The following general topics should be addressed, although not all of the subtopics will apply for all Projects.

##### Air Quality Impacts

Include a discussion regarding potential environmental impact from the seven criteria pollutants in the Clean Air Act (e.g., sulfur dioxide, nitrogen oxides, carbon monoxide, hydrocarbons, particulate matter less than 10 micron (e.g.,  $PM_{10}$ ), lead, and ozone). Include a discussion regarding other gaseous emissions, including Greenhouse Gases and hazardous air pollutants. Consider construction and operation activities in assessing impact on air quality. Include emission rates and duration of emissions. Include a discussion regarding compliance with Federal, State, and Local environmental regulations. Discuss status of Federal, State, and Local permits on air emissions. Current emissions and the projected effect of new emission sources need to be presented (quantitatively, in tabular form) and proposed mitigation measures to prevent environmental degradation need to be presented.

##### Water Quality/Quantity Impacts

Include a discussion estimating current water discharges, changes to current discharges, and any new discharges associated with the action under consideration, and the potential environmental impact to surface and ground waters (in quantitative, tabular fashion). Include changes in water quality and quantity. The uses of both surface and ground waters should be included in the discussion. The discussion should include sources of water supply (e.g., public water supply or dedicated well) and any National Pollutant Discharge Elimination System (NPDES) permit(s). Include a discussion concerning on-site treatment of wastewater. Include a discussion regarding compliance with Federal, State, and Local environmental regulations. Discuss status of Federal, State, and Local permits on water discharges. Describe any stream diversions caused by construction or proposed new operations activities. Proposed mitigation measures to prevent environmental degradation need

to be discussed if relevant. The depth of aquifers, other uses of aquifers, and potential for recharge should also be addressed.

#### **Solid Waste Disposal**

Include a discussion of current solid waste management practices and potential new solid waste streams. This information needs to be presented in quantitative, tabular fashion and should include waste characteristics, quantities, pretreatment, storage, transportation, and disposal practices. Identify any potentially hazardous waste materials including construction materials such as solvents and cleaning material. Include any results from analyzing the solid waste in accordance with the Resource Conservation and Recovery Act waste characterization tests. Include a discussion regarding compliance with Federal, State, and Local environmental regulations. Discuss status of Federal, State, and Local permits on solid waste management. Proposed mitigation measures to prevent environmental degradation need to be discussed if relevant.

#### **Land Use**

Include a discussion of short-term and long-term land use impacts from construction and operation activities. Effects of the proposed Project on area population, and land use (e.g., prime farmland, water bodies, and recreational areas). Proposed mitigation measures designed to prevent soil erosion or degradation during construction and operation need to be considered and presented if applicable. Describe site restoration activities following Project completion if appropriate.

#### **Noise**

Include a discussion of possible environmental impacts from noise generated by the Project both during construction and operation. Include a discussion of current noise levels and any possible increases in noise levels from the Project. In general, the noise level is measured at the nearest point of public access and noise impacts on site workers. Include a discussion regarding proximity and any possible impact to noise-sensitive sites such as schools, hospitals, and nursing homes. Consider impact of noise during construction and operation activities.



### Floodplains or Wetlands

Include a discussion of possible environmental impacts to floodplains and wetlands on or near the site. Discuss contacts with Federal and State agencies to assess Project impact on floodplains and wetlands. If appropriate, include mitigation measures which will be used to prevent effects to potentially affected floodplains and/or wetlands.

### Native American Tribal and Religious Practices

Discuss any potential effects and mitigative requirements.

### Historic Areas

Include information regarding contacts with State agencies to assess Project impact on archaeological, cultural, and historically-significant resources.

### Ecological Impacts

Include a discussion regarding potential environmental impacts to vegetation, terrestrial wildlife, aquatic wildlife, threatened and endangered species, and ecologically sensitive habitats both on site and off site which may be affected by the proposed action. Include information regarding contacts with Federal and State agencies regarding impact to the ecology. Provide a discussion of potential mitigation measures if applicable.

### Socioeconomic Impacts

Include information regarding availability of labor for the Project, availability of transportation, and any potential impact on housing and public services. Note any positive impact to socioeconomic factors (e.g., additional employment for local population). Address any potential concerns of local ethnic populations, including Native American Peoples. Note impacts to visual or aesthetic quality. Note any impact from visible (smoke) or odorous emissions. Where negative impacts are noted, discuss potential mitigation measures.

### Occupational Safety and Health

Include information on worker safety and health protection programs and procedures, compliance with OSHA regulations, and facility design features related to mitigation of occupational impacts. Discuss hazards and mitigation measures related to construction activities and exposure to hazardous substances, heat, noise, and odors.

### Cumulative Impacts

The cumulative impact is the sum of the incremental impact from the proposed action and impacts from past, present, and reasonably foreseeable future actions. Individual impacts may be minor, but the combined impact (e.g., cumulative) can be significant. Include a discussion of the contribution of environmental impacts from the proposed action to the cumulative impact. Each of the potential environmental impacts described above should be considered relative to their impact on the existing environmental setting and emissions. Generally, impacts which contribute to the cumulative impact include air emissions, water and liquid effluent treatment, solid waste management, and land use.

### Summary of Impacts

Include a factual summary of potential environmental impacts considering statements included in this document.

### LIST OF AGENCIES AND PERSONS CONTACTED

Provide complete addresses and phone numbers of agencies and persons contacted to collect information on the EH&S aspects of the Project, and copies of clearance letters.

## REFERENCES

List publicly accessible documents used in preparation of the Environmental Assessment.

## **APPENDIX K**

### **COST ESTIMATE AND FINANCING EXHIBITS**

**NOTE:** The attached exhibit forms are provided as a convenience to the Proposer to show the required information. The Proposer may, however, provide a facsimile with the required information.

## TABLE OF CONTENTS

<u>EXHIBIT</u>	<u>TITLE</u>	<u>PAGE</u>
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C	MAJOR EQUIPMENT	K-9
D	SUMMARY OF OPERATING AND STARTUP COSTS	K-15
E	SUMMARY FINANCING PLAN	K-19
F	SUMMARY OF IN-KIND CONTRIBUTIONS	K-27
G	PRO FORMA INCOME STATEMENTS	K-31
H	PRO FORMA SOURCES AND USES OF FUNDS STATEMENT	K-32

**EXHIBIT A**  
**PROJECT COST SUMMARY**

The attached form for Exhibit A should be used to provide the required Project Cost Summary information. This exhibit uses the WBS developed for the technical proposal (Section 5.3.6.1) as a basis for development of the Project cost estimate. Each Phase should be detailed to WBS level 3 (i.e., the task level). All proposed preaward costs should be identified separately. These preaward costs will be cost shared at the overall total Project cost ratio only after Award. For this cost estimate the task amounts for Phases I, II, and III should total the Project Cost. Phase I should include, if applicable, all Project Specific Development Activities and/or Project Definition Activities and each related task should be clearly identified. The preaward and Project totals from this exhibit should equal the preaward and Project totals shown in Exhibit E. The task totals should equal the task totals in Exhibit B.

The following outline is provided as an example to be used to identify the task numbers:

TOTAL ESTIMATED COST (Sum of preaward, Phases I, II, and III)

PREAWARD COST

1.0 TOTAL PROJECT COST (To complete SOW)

1.1 PHASE I COST

- 1.1.01 Project Specific Development Activities - task 1 cost
- 1.1.02 Project Specific Development Activities - task 2 cost
- 1.1.03 Project Specific Development Activities - task 3 cost
- 1.1.04 Project Definition Activities - task 4 cost
- 1.1.05 Project Definition Activities - task 5 cost
- 1.1.06 Project Definition Activities - task 6 cost
- 1.1.07 Phase I - task 7 cost
- 1.1.08 Phase I - task 8 cost
- etc.

1.2 PHASE II COST

- 1.2.01 Phase II - task 1 cost
- 1.2.02 Phase II - task 2 cost
- etc.

For this summary, the summation of task amounts in each Phase should equal the Phase total and the Phase amounts should equal the total Project cost. List all of the tasks and then the summary totals for each category on the attached exhibit form.

#### **TASK**

Identify the WBS task number and provide a short description of the task. The WBS task total base cost, escalation cost and estimated cost should be the same as the totals shown in Exhibit B, Summary of Cost Elements by WBS Task and Year. Detailed escalation information is not required to be submitted for Proposal purposes but should be made available as required for review after selection.

#### **PHASE**

The total amount of tasks in each Phase should be summarized at the bottom of the form. The total estimated cost for each category should equal the respective totals in Exhibits E.1 and E.2.

#### **OTHER**

Other totals related to preaward and, if applicable, Project Specific Development Activities, and/or Project Definition Activities, which must be in the first Budget Period, should be shown at the bottom of the exhibit. These totals should be the same as identified in Exhibit E.1, Summary Financing Plan for the First Budget Period. This is important to the comprehensive evaluation of the finance criteria.

**EXHIBIT A**

PAGE        of       

DATE: \_\_\_\_\_

TOTAL	PREAWARD	
TOTAL	PROJECT SPECIFIC DEVELOPMENT ACTIVITY TASKS	
TOTAL	PROJECT DEFINITION ACTIVITY TASKS	

\* ENTER YEAR FOR BASE COST



## **EXHIBIT B**

### **SUMMARY OF COST ELEMENTS BY WBS TASK AND YEAR**

The attached form for Exhibit B should be used to provide the required Summary of Cost Elements information by WBS task and year. This information should be provided by the Proposer. If the total cost for all subcontracts and/or consultants exceeds 20 percent of the proposed total estimated cost, then the same information should be provided for each subcontractor and/or consultant. This information may be based on estimates made by the Proposer in the event that the subcontractor and/or consultant has not yet been identified. In cases where an estimate is carried out independently by a subcontractor or consultant, the Proposer should ensure that such an estimate is consistent with the applicable SOW. The Major Equipment total should equal the amount shown in Exhibit C.1, Major Equipment Cost List. The total of the In-Kind Contributions should agree with the total in Exhibit F, Summary of In-Kind Contributions By Phase and Year.

#### **WBS TASK**

Develop the estimated cost by cost element detail for each fiscal year covered by the WBS task and provide the total by cost element for each WBS task. The cost element detail includes material, labor hours, labor rates, overheads, other direct costs, etc. The total by WBS task should agree with Exhibit A.

#### **NOTE**

In-Kind Contributions of costs which are not clearly identifiable to one specific task should be allocated to all tasks to which they pertain. Detailed information of the In-Kind Contributions is to be provided in Exhibit F.

# EXHIBIT B

## SUMMARY OF COST ELEMENTS BY WBS TASK AND YEAR

PROPOSER/SUBCONTRACTOR: \_\_\_\_\_ PAGE \_\_\_\_ OF \_\_\_\_  
 WBS TASK NUMBER/DESCRIPTION: \_\_\_\_\_ DATE: \_\_\_\_\_

	COST ELEMENT	ESTIMATED COST				TOTAL
		YEAR:	YEAR:	YEAR:	YEAR:	
1.	MATERIAL: A) MAJOR EQUIPMENT (Exhibit C.1)					
2.	B) BULK PURCHASES					
3.	C) OTHER					
4.	TOTAL DIRECT MATERIAL	\$	\$	\$	\$	\$
5.	MATERIAL OVERHEAD % RATE					
6.	DIRECT LABOR - HOURS	Hrs	Hrs	Hrs	Hrs	Hrs
7.	DIRECT LABOR - COST					
8.	LABOR OVERHEAD % RATE					
9.	SPECIAL TESTING / EQUIPMENT					
10.	SUBCONTRACTS					
11.	CONSULTANTS					
12.	TRAVEL					
13.	OTHER DIRECT COSTS					
14.	TOTAL DIRECT COSTS & OVERHEAD (ITEMS 1 THROUGH 9)	\$	\$	\$	\$	\$
15.	G&A % RATE					
16.	TOTAL ESTIMATED COST EXCLUDING IN-KIND CONTRIBUTIONS (Items 10 & 11)	\$	\$	\$	\$	\$
17.	IN-KIND CONTRIBUTIONS (Details in Exhibit F)					
18.	TOTAL PROPOSED BASE COST (Items 12 & 13)	\$	\$	\$	\$	\$
19.	ESCALATION % RATE					
20.	TOTAL PROPOSED COST (Items 14 & 15)	\$	\$	\$	\$	\$

**EXHIBITS C AND C.1**

**MAJOR EQUIPMENT CHARACTERISTICS LIST**  
**and**  
**MAJOR EQUIPMENT COST LIST**

Major equipment items should have been identified in the flowsheet that appears in Proposal Section II.B; see Section 5.3.2. These exhibits should detail characteristics and costs of major equipment items using the attached forms for Exhibits C and C.1. The equipment costs for each task should equal the WBS task total for Major Equipment as identified in Exhibit B.

In Exhibit C.1, the installation cost for the equipment should be the cost associated with installation only and should not include the cost of the equipment that is installed nor the freight charges. The total cost per unit of equipment item should be the sum of the equipment cost, the sales tax, the freight charges, and the installation cost. Total cost would then depend on the quantity of equipment item units.

**EXHIBIT C**

PAGE \_\_\_ OF \_\_\_

DATE: \_\_\_\_\_

[illegible]

**EXHIBIT C.1**

PAGE      OF     

DATE: \_\_\_\_\_

[illegible]

## EXHIBIT D

### SUMMARY OF OPERATING AND STARTUP COSTS

The attached form for Exhibit D should be used to provide the required information concerning total Project operating and startup costs. A narrative may be included as an attachment to the form.

#### **FIXED OPERATING AND MAINTENANCE COSTS**

Operating labor costs should be broken down into the number of operators per shift, total operating hours, and the average operating labor pay rate per hour as indicated. Then the total operating labor costs should be calculated and given. Also, total maintenance labor costs, maintenance material costs, and administrative and support labor costs should be provided. The total fixed operating and maintenance costs should be calculated and given as indicated.

#### **VARIABLE OPERATING COSTS**

Variable operating costs should be given for all commodities used. These should include raw materials used in the process and such items as fuel, sorbents/chemicals, raw water, cooling tower blowdown water, steam, auxiliary power, and waste effluents. By product credits and fuel credits should also be provided. For each commodity, the data should be broken down into \$/unit, quantity/hr, cost \$/hr, total hours, total cost. Total cost for all commodities should be given on the last line.

#### **STARTUP COSTS**

The months required for startup and the total costs associated with start-up should be given. Startup costs refer to those additional costs incident to startup, and not to normal Project costs during the startup period.

## EXHIBIT D

### SUMMARY OF OPERATING AND STARTUP COSTS

PROPOSER: \_\_\_\_\_  
 PROJECT TITLE: \_\_\_\_\_

FIXED OPERATING AND MAINTENANCE COSTS	
1. Operating Labor Costs	
<div style="display: flex; justify-content: space-between;"> <div>Number of Operators per Shift</div> <div>_____</div> </div>	
<div style="display: flex; justify-content: space-between;"> <div>Total Operating Hours</div> <div>_____</div> </div>	
<div style="display: flex; justify-content: space-between;"> <div>Operating Labor Pay Rate per Hour</div> <div>_____</div> </div>	
<div style="display: flex; justify-content: space-between;"> <div>Total Operating Labor Costs</div> <div>_____</div> </div>	
2. Total Maintenance Labor Costs	_____
3. Total Maintenance Material Costs	_____
4. Total Administrative and Support Labor Costs	_____
5. Total Fixed O&M Costs	_____

VARIABLE OPERATING COSTS						
Commodity	Unit	\$/Unit	Quantity/Hr	Cost \$/Hr	Total Hours	Total Cost
Total						

STARTUP COSTS	
Months	_____
Total Costs	_____

**EXHIBITS E, E.1 AND E.2**

**SUMMARY FINANCING PLAN,**  
**SUMMARY FINANCING PLAN FOR THE FIRST BUDGET PERIOD,**  
**and**  
**SUMMARY FINANCING PLAN FOR REMAINING BUDGET PERIODS**

The attached forms for Exhibits E, E.1, and E.2 should be used to provide the summary and detailed information for financing the entire Project. All financing required to cover costs to be incurred in the first Budget Period should be so identified in Exhibit E.1. This is important to the comprehensive evaluation of the finance criteria. Failure to identify the first Budget Period financing may cause a deficiency serious enough to fail the comprehensive evaluation. The cost share dollars and percentages shown in Exhibit E should be the same as in the Authorization Certification or SF 424 required by Appendix G. In-Kind Contributions should be detailed in Exhibit F, Summary of In-Kind Contributions by Phase and Year.

All financing required to cover costs in the remaining Budget Periods should be identified in Exhibit E.2. Summary totals and percentages should be shown on Exhibit E.

**The following should be used for the ROLE OF CONTRIBUTOR:**

- P = Proposer**
- S = Sponsor** - Include industry-funded research organizations, state/local governments, and any third parties whose sole purpose is to provide funds or guarantees to the Project.
- PR = Partner** - Include Project Team members who will be partners.
- SC = Subcontractor** - Include Project Team members who will be subcontractors.
- O = Other Project Team member** - Include Project Team members who will not be subcontractors such as equipment vendors, host utilities, etc. The Proposer should describe the role of each contributor in this category.



**The following should be used for CASH TYPE:**

- C =** Cash equity from internally generated funds.
- A =** Additional cash equity to be obtained (i.e. sale of stocks or bonds). Describe in an attachment to the exhibit.
- D =** Debt. Identify source (bank, insurance company, vendor, etc.), type of debt (non-recourse or recourse), and provide assumptions regarding interest rate and annual debt service for each source of anticipated debt financing.
- G =** Grant from industry-funded research organizations and state/local governments.
- P =** Program Income. Must be fully supported in Exhibit G.
- O =** Other. Describe any cash type(s) in this category.

**Additional narrative information should be attached to Exhibits E.1 and E.2, if required.**

# EXHIBIT E

## SUMMARY FINANCING PLAN

PROPOSER: \_\_\_\_\_ PAGE \_\_\_\_ OF \_\_\_\_  
 PROJECT TITLE: \_\_\_\_\_ DATE: \_\_\_\_\_

DOLLARS	PREAWARD	BUDGET PERIODS		TOTAL PROJECT	TOTAL FINANCING
		FIRST	REMAINING		
CASH CONTRIBUTIONS	\$	\$	\$	\$	\$
IN-KIND CONTRIBUTIONS					
TOTAL NON-DOE COST SHARE	\$	\$	\$	\$	\$
U.S. DOE					
TOTAL	\$	\$	\$	\$	\$

PERCENTAGE	PREAWARD	BUDGET PERIODS		TOTAL PROJECT	TOTAL ESTIMATED COSTS
		FIRST	REMAINING		
CASH CONTRIBUTIONS	%	%	%	%	%
IN-KIND CONTRIBUTIONS	%	%	%	%	%
TOTAL NON-DOE COST SHARE	%	%	%	%	%
U.S. DOE	%	%	%	%	%
TOTAL	%	%	%	%	%
	..			..	

\* TOTAL FINANCING SHOULD REPRESENT TOTAL ESTIMATED COSTS WHICH EQUALS PREAWARD AND PROJECT COSTS.

\*\* THE PREAWARD COST SHARE MUST EQUAL THE PERCENTAGE OF THE TOTAL PROJECT (PHASES I - III).

## SUMMARY FINANCING PLAN FOR THE FIRST BUDGET PERIOD

PAGE \_\_\_ OF \_\_\_

DATE: \_\_\_\_\_

[illegible]

• C/I - IDENTIFY EACH CONTRIBUTION AS CASH (C) OR IN-KIND (I).

**PSDA = Project Specific Definition Activities**

**PDA = Project Definition Activities**

**OTHER -**

**EXHIBIT E.2**

**PAGE**      **OF**     

DATE: \_\_\_\_\_

[illegible]

\* C/I - IDENTIFY EACH CONTRIBUTION AS CASH (C) OR IN-KIND (I).

.. PHASE I TASKS NOT COVERED IN EXHIBIT E.1.

## **EXHIBIT F**

### **SUMMARY OF IN-KIND CONTRIBUTIONS BY PHASE AND YEAR**

The Proposer is to provide the following information for all In-Kind Contributions proposed for each Phase. The attached form for Exhibit F should be used with a narrative attachment, as required, to fully identify and support the proposed In-Kind Contributions. The information must be verifiable to the Proposer's records. Provide the information requested which is appropriate for the type of In-Kind Contribution being proposed.

#### **SOURCE OF IN-KIND CONTRIBUTION**

The name and role of the contributor as shown in Exhibits E.1 and/or E.2.

#### **DESCRIPTION OF IN-KIND CONTRIBUTION**

The type of In-Kind Contribution, such as property, equipment, land, services, etc., and a brief description of the expected use.

#### **AVAILABILITY/AMOUNT OF USE**

Provide the total amount of time the item being contributed is available for use and the estimated amount of time the item will be used on/for this Project.

#### **UNIT VALUE**

Provide the unit value and the quantity, as appropriate.

#### **PHASE**

Phase I, II, or III.

**PROPOSED VALUE (by Total and by Year)**

State the estimated value. The estimated value will be developed following the procedures in 10 C.F.R. 600 Subparts D and E for State or local government Participants, or OMB Circular A-110, Attachment E, Paragraph 5 for all other Participants.

-----

The following information should be provided in an attachment to the form for Exhibit F, as necessary.

**DATE OF ACQUISITION AND ACQUISITION COST**

Date when the item was originally purchased and original acquisition cost. Provide documentation to support original acquisition cost stated.

**DEPRECIATION STATUS**

State if the item is fully depreciated or is currently being depreciated. For fully depreciated equipment or facilities provide evidence to show that it was continuously used during the entire Calendar Year 1991.

**DEPRECIATION AMOUNT**

Provide the yearly depreciation schedule and the years during which the depreciation took/takes place.

**EXHIBIT F**

**PROPOSER:**

**PROJECT TITLE:**

**PAGE** \_\_\_\_\_ **OF** \_\_\_\_\_

DATE:

[illegible]

## **EXHIBIT G**

### **PRO FORMA INCOME STATEMENTS FOR PHASE III**

This exhibit is required in all cases where a Project generates Program Income. Pro forma income statements should be provided by quarter for the entire period of operation of the Demonstration Project. These statements should include the following information:

1. Itemization of the sources of Program Income, quantities of products and byproducts, unit prices and any fees for services;
2. Itemization of the Project-Specific Variable Operating Costs, quantities, unit costs, labor requirements and rates;
3. Itemization of project-specific fixed charges, quantities, unit costs, labor requirements and rates;
4. Provide all assumptions that support the pro forma statements, e.g. stream factor and capacity factor per quarter and the technical rationale that supports these projections, escalation factors, ratios for overhead, maintenance, etc.
5. Identify any one-time or infrequent costs that will be incurred during Phase III, e.g. the additional costs of start-up, turnarounds or replacement of equipment, etc.

Total variable operating costs and fixed operating and maintenance costs for all quarters should agree with the corresponding total costs shown in Exhibit D.



**EXHIBIT H**  
**PRO FORMA SOURCES AND USES OF FUNDS STATEMENT**

The Proposer must submit a pro forma sources and uses of funds statement showing the funding for the SOW activities. The statement should delineate both funding sources (i.e., cash contributions, contributed equity, short-term and long-term debt, DOE contribution, In-Kind Contribution and Program Income) and funding uses (i.e., capital outlays, financing fees, principal and interest payments on outstanding obligations, cash for operations, taxes and insurance, and any other charges) on an annual basis.

APPENDIX L

MODEL COOPERATIVE AGREEMENT

U.S. DEPARTMENT OF ENERGY  
NOTICE OF FINANCIAL ASSISTANCE AWARD  
(See Instructions on Reverse)

Under the authority of Public Law \_\_\_\_\_ and  
subject to legislation, regulations and policies applicable to (cite legislative program title): \_\_\_\_\_

1. PROJECT TITLE	2. INSTRUMENT TYPE <input type="checkbox"/> GRANT <input type="checkbox"/> COOPERATIVE AGREEMENT	
	4. INSTRUMENT NO.	5. AMENDMENT NO.
3. RECIPIENT (Name, address, zip code, area code and telephone no.)	6. BUDGET PERIOD FROM: _____ THRU: _____	7. PROJECT PERIOD FROM: _____ THRU: _____
	10. TYPE OF AWARD <input type="checkbox"/> NEW <input type="checkbox"/> CONTINUATION <input type="checkbox"/> RENEWAL <input type="checkbox"/> REVISION <input type="checkbox"/> SUPPLEMENT	
8. RECIPIENT PROJECT DIRECTOR (Name and telephone No.)	12. ADMINISTERED FOR DOE BY (Name, address, zip code, telephone No.)	
9. RECIPIENT BUSINESS OFFICER (Name and telephone No.)		
11. DOE PROJECT OFFICER (Name, address, zip code, telephone No.)		

13. RECIPIENT TYPE	<input type="checkbox"/> STATE GOV'T <input type="checkbox"/> INDIAN TRIBAL GOV'T <input type="checkbox"/> HOSPITAL <input type="checkbox"/> FOR PROFIT ORGANIZATION <input type="checkbox"/> INDIVIDUAL
	<input type="checkbox"/> LOCAL GOV'T <input type="checkbox"/> INSTITUTION OF HIGHER EDUCATION <input type="checkbox"/> OTHER NONPROFIT ORGANIZATION <input type="checkbox"/> C <input type="checkbox"/> P <input type="checkbox"/> SP <input type="checkbox"/> OTHER (Specify) _____

14. ACCOUNTING AND APPROPRIATIONS DATA				15. EMPLOYER I.D. NUMBER/SSN
a. Appropriation Symbol	b. B & R Number	c. FT/APP/OC	d. CFA Number	

16. BUDGET AND FUNDING INFORMATION	
a. CURRENT BUDGET PERIOD INFORMATION	b. CUMULATIVE DOE OBLIGATIONS
(1) DOE Funds Obligated This Action \$ _____	(1) This Budget Period \$ _____ (Total of lines a. (1) and a. (3))
(2) DOE Funds Authorized for Carry Over \$ _____	(2) Prior Budget Periods \$ _____
(3) DOE Funds Previously Obligated in this Budget Period \$ _____	(3) Project Period to Date \$ _____ (Total of lines b. (1) and b. (2))
(4) DOE Share of Total Approved Budget \$ _____	
(5) Recipient Share of Total Approved Budget \$ _____	
(6) Total Approved Budget \$ _____	

17. TOTAL ESTIMATED COST OF PROJECT \$ \_\_\_\_\_  
(This is the current estimated cost of the project. It is not a promise to award nor an authorization to expend funds in this amount.)

## 18. AWARD/AGREEMENT TERMS AND CONDITIONS

This award/agreement consists of this form plus the following:

a. Special terms and conditions (if grant) or schedule, general provisions, special provisions (if cooperative agreement)

b. Applicable program regulations (specify) \_\_\_\_\_ (Date) \_\_\_\_\_

c. DOE Assistance Regulations, 10 CFR Part 800, as amended, Subparts A and ☐ B (Grants) or ☐ C (Cooperative Agreements).

d. Application/proposal dated \_\_\_\_\_ ☐ as submitted ☐ with changes as negotiated

## 19. REMARKS

## 20. EVIDENCE OF RECIPIENT ACCEPTANCE

\_\_\_\_\_  
(Signature of Authorized Recipient Official) (Date) \_\_\_\_\_  
\_\_\_\_\_  
(Name)  
\_\_\_\_\_  
(Title)

## 21. AWARDED BY

\_\_\_\_\_  
(Signature) (Date) \_\_\_\_\_  
\_\_\_\_\_  
(Name)  
\_\_\_\_\_  
(Title)

# INSTRUCTIONS

*(This form shall be completed in accordance with the following instructions. For any clarification or additional information that might be needed, consult the appropriate section of the DOE Financial Assistance Procedures Manual (DOE-FAPM).)*

Insert in the space provided, in the line which begins, "Under the Authority of Public Law . . . ." the number and the name of the Public Law which authorizes this award. On the line below, enter the title of the pertinent program.

**Block 1** - Enter the project title as it appears in the SF-424 or equivalent application/proposal face sheet.

**Block 2** - Place a checkmark in the box beside the appropriate financial assistance instrument.

**Block 3** - Enter the name, address and telephone number of the applicant/proposer as it appears in the SF-424 or equivalent application/proposal face sheet.

**Block 4** - Enter the instrument number. (See DOE-FAPM.)

**Block 5** - Enter the appropriate amendment number. (See DOE-FAPM for guidance.)

**Block 6** - Enter the starting date and expiration date for the current budget period. If a budget period is being changed, enter the starting date and expiration date for the budget period, as changed.

**Block 7** - Enter the starting date and anticipated completion date for the project. If a project period is being changed, enter the starting date and anticipated completion date for the project period, as changed.

**Block 8** - Enter the name and telephone number of the individual designated by the applicant/proposer as the director of the project.

**Block 9** - Enter the name and telephone number of the individual designated by the applicant/proposer as the contact for all business matters.

**Block 10** - Place a checkmark in the box opposite the term which identifies the type of action being taken. (The terms are defined in the DOE-FAPM.)

**Block 11** - Enter the name, address and telephone number of the individual designated by the DOE program office as the project officer.

**Block 12** - Enter the name, address and telephone number of the individual/organization who will administer the agreement for DOE.

**Block 13** - Place a checkmark in the box beside the applicable recipient type. If the recipient is a for-profit organization also check one of the lower boxes as follows: "C" for Corporation, "P" for Partnership and "SP" for Sole Proprietorship. If the recipient is of a type not indicated place a checkmark in the box beside "Other," and identify the recipient type in the space provided.

**Block 14** - Enter where indicated, the appropriation symbol, B&R number, Fund Type (FT)/AFP Code (AFP)/Objective Class (OC) and CFA Number from the Procurement/Financial Assistance Request Authorization (DOE Form PR-799A). Completion of Block 14.d. is required only for awards made by Headquarters.

**Block 15** - Enter the applicant's/proposer's Federal Employer Identification No. from the SF-424 or equivalent application/proposal face sheet, or if the applicant/proposer is an individual, enter his/her

**Block 16** - Entries should be made as follows. (If no dollar entry is appropriate a zero should be entered to indicate there was no error of omission.)

Line a.(1) - Enter the amount of DOE funds obligated by this action.

Line a.(2) - Enter the amount of DOE funds not expended in prior budget period(s), if any, authorized by DOE for expenditure in the current budget period.

Line a.(3) - Enter the amount of DOE funds previously obligated in the current budget period.

Line a.(4) - Enter DOE's share of the total approved budget shown on Line a.(6).

Line a.(5) - Enter the recipient's share of the total approved budget shown on Line a.(6).

Line a.(6) - Enter the total approved budget for the current budget period. (Add the amounts in lines a.(4) and a.(5).)

Line b.(1) - Enter the amount of DOE funds obligated in the current budget period. (Add the amounts in lines a.(1) and a.(3).)

Line b.(2) - Enter the amount obligated by DOE in prior budget periods.

Line b.(3) - Enter the amount obligated by DOE in the project period to date. (Add the amounts in lines b.(1) and b.(2).)

**Block 17** - Must be completed for cooperative agreements. Contracting Officers may exercise discretion as to whether to complete it for grants. Enter in the blank provided, the amount which represents the current estimate of total funds and dollar value of in-kind contributions (both DOE and recipient shares) needed to carry out the entire project. Include all funds and contributions previously provided, those being provided by this action, and all anticipated future obligations and contributions of both parties.

**Block 18** - Complete as follows:

Item a. - No entry necessary.

Item b. - Enter the legal citation from the Code of Federal Regulations or Federal Register and the effective date for the program regulations applicable to the program under which the award is made.

Item c. - Mark the box beside B for grants or C for cooperative agreements.

Item d. - In the blank provided, enter the date of the application/proposal. (If SF-424 is used, see block 23c on page 1.) Place a checkmark in the appropriate box to indicate whether the application/proposal was accepted as submitted or with negotiated changes.

**Block 19** - Enter any explanation or advisory comments which are required for, or applicable to, this action.

**Block 20** - Will be completed by the recipient.

**Block 21** - The Contracting Officer shall sign and date the top line. His/her name and title should be entered on the next two lines. This box must be signed prior to forwarding to recipient.

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## SCHEDULE OF ARTICLES

### ARTICLE I. STATEMENT OF JOINT OBJECTIVES

#### (A) Primary Objective

The primary objective of this Cooperative Agreement is to conduct a cost-shared project that will demonstrate [*insert name of technology*]. The parties anticipate that, if the demonstration project is successful, the [ ] technology could become commercialized and will advance significantly the efficiency and environmental performance of coal using technologies.

#### (B) Technical Objectives of the Demonstration Project

[*INSERT SUMMARY DESCRIPTION OF SPECIFIC TECHNICAL OBJECTIVES OF THE DEMONSTRATION PROJECT*]

#### (C) Legal Authority for this Cooperative Agreement

The expenditure of DOE funds under this Cooperative Agreement is subject to the requirements of Pub. L. 102-154. Except as otherwise expressly provided in Pub. L. 102-154 or by the terms of this Cooperative Agreement, the parties shall comply with the applicable provisions of Subparts A, C, and \_\_\_\_\_ of the DOE Financial Assistance Rules, 10 C.F.R. Part 600. [*Insert "D and "E" in the blank if the Participant is a State or local government or an Indian tribe; insert "B" for all other types of Participants.*]

## ARTICLE II. DEFINITIONS

"Budget" means the financial expenditure plan (submitted by the Participant in its proposal, in any pre-award amendments to its proposal, and in any continuation applications) for carrying out the project. The budget includes the cost-sharing the Participant is required to provide and, for Phase 3 (Operation), shall include the fixed and variable allowable costs of operating the demonstration facility.

"Budget Period" means the interval of time, specified in Article VII of this Cooperative Agreement, into which the project is divided for budgeting and funding purposes.

"Continuation Award" means an award for a succeeding or subsequent budget period after the first budget period of this Cooperative Agreement.

"Contracting Officer" means the DOE official authorized to execute awards and amendments thereto on behalf of DOE and who is responsible for the business management and non-program matters relating to this Cooperative Agreement.

"Contracting Officer's Representative (COR)" means the DOE authorized representative for all technical matters pertaining to the Cooperative Agreement.

"Cooperative Agreement" means this agreement between the United States Department of Energy (DOE) and the Participant, DOE Instrument Number \_\_\_\_\_, and any subsequent amendments.

"Cost-sharing" means the portion of the allowable direct and indirect project costs required to be borne by the Participant.

"DOE" means the United States Department of Energy and any successor department or agency.

"Government" means the government of the United States, including DOE.

"NEPA" means the National Environmental Policy Act of 1969, 42 U.S.C. § 4321 et seq.

"Participant" means [INSERT NAME OF ORGANIZATION SIGNING THE COOPERATIVE AGREEMENT] and its successors and assigns.

"Prior approval" means documentation signed by a DOE Contracting Officer evidencing consent to the incurring of a specific cost before it is incurred. The procedures for requesting prior approval are set forth in 10 C.F.R. § 600.114 (e) or 600.430(f).

"Project" means the set of activities described in Attachment A, Statement of Work, that the Participant is required to perform during Phases 1, 2, and 3 of this Cooperative Agreement.

"Program Income" means the gross income earned directly from any demonstration project activity supported with DOE funds during Phases 1, 2, and 3. Such income includes fees for services; fees or rental income for the use of real or personal property acquired with DOE funds; and income from the sale of fuel, byproducts, or energy generated by the demonstration project. Such income does not include interest on DOE funds; rebates, credits, discounts, refunds, etc. and any interest earned on any of the foregoing; or income from royalties and license fees.

"Pub. L. 102-154" means Title II of "an Act Making Appropriations for the Department of the Interior and Related Agencies For The Fiscal Year Ending September 30, 1992, and for Other Purposes," specifically the provisions under the Department of Energy headings entitled, "Clean Coal Technology" (105 Stat. 1019-1020) and "Administrative Provisions, Department of Energy" (105 Stat. 1025).

"Repayment Agreement" means the agreement made by the Participant in DOE Instrument Number \_\_\_\_\_ on \_\_\_\_\_, 1993, to repay the DOE share of costs paid under this Cooperative Agreement.



"Total Approved Budget" means the amount of costs authorized to be incurred during each budget period, as shown on the Notice of Financial Assistance Award, by the Participant and any of its contractors. The total approved budget consists of DOE funds for allowable direct and indirect costs and the Participant's required cost-sharing, and shall include the fair use value of in-kind contributions that will be made to carry out the project.

"United States" means the United States of America and its 50 States, the District of Columbia, the Commonwealth of Puerto Rico, and any possession or trust territory of the United States.

### ARTICLE III. PROJECT MANAGEMENT

#### (A) Participant Role

The Participant shall be responsible for all aspects of project performance as set forth in the Statement of Work, Attachment A. All services, personnel, facilities, equipment, materials, and supplies shall be furnished by the Participant, unless otherwise specified under this Cooperative Agreement.

The Participant shall designate a Project Manager who shall serve as its authorized representative for the technical and administrative elements of all work to be performed under this Cooperative Agreement. The Project Manager shall be the single authorized point of contact for all communications between the Participant and DOE.

#### (B) DOE Role

DOE shall monitor the Participant's progress in performing the project, and shall, as indicated in this paragraph and in Article VIII, have a substantial role in project decision making. DOE also shall approve or disapprove all actions for which, by the terms of this Cooperative Agreement, the Participant is required to obtain DOE's approval.

(C) No Government Obligation to Third Parties

In connection with the performance of the Project, the Government shall have no obligation or responsibility to any contractor, subcontractor or other person who is not a party to this Cooperative Agreement. The foregoing limitation shall apply notwithstanding the Contracting Officer's prior approval or consent of any contract awarded by the Participant. The Participant shall be responsible, without recourse to DOE, for the resolution and satisfaction of all preaward protests, contract administration issues, and contract disputes arising out of acquisitions related to the Project.

(D) Participant's Project Management Structure/Procedures

The Participant shall manage the project in accordance with the Project Management Plan which, as indicated in the Statement of Work, shall be submitted to DOE for approval. *[INSERT material which is pertinent and specific to the project.]*

ARTICLE IV. DESIGNATION OF THE DOE CONTRACTING OFFICER'S REPRESENTATIVES

COR: (see Block 12 of the Notice of Financial Assistance Award)

Contract Specialist: (see Block 11 of the Notice of Financial Assistance Award)

Intellectual Property Counsel: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The DOE Contracting Officer is the only Government representative authorized to accept the reports and other deliverables the Participant is required to provide under this Cooperative Agreement. The review and approval of such reports and other deliverables may be delegated to the Contracting Officer's authorized representatives.

The DOE Contracting Officer shall designate in writing a COR who shall have the authority to issue written Technical Advice which suggests redirecting the project work (e.g., by changing the emphasis among different tasks), or pursuing specific lines of inquiry likely to assist in accomplishing the Statement of Work. The COR shall have the authority to approve or disapprove those technical reports, plans, and other technical information the Participant is required to submit to DOE for approval. The COR is not authorized to issue and the Participant is not required to follow any Technical Advice which constitutes work which is not within the scope of the Statement of Work; which in any manner causes an increase or decrease in the total estimated cost or in the time required for performance of the project; which has the effect of changing any of the terms or conditions of the Cooperative Agreement; or which interferes with the Participant's right to perform the project in accordance with the terms and conditions of this Cooperative Agreement.

#### ARTICLE V. KEY PERSONNEL

The personnel specified in this clause are considered to be essential to the project. Before permitting the Project Manager to be absent for more than three months and before diverting any key person to other work, the Participant shall notify the Contracting Officer reasonably in advance and shall submit justification (including proposed substitutions) in sufficient detail to permit evaluation of the impact on the project. No key person may be substituted without the Contracting Officer's approval. Such approval shall be obtained in advance of the substitution, except that the Contracting Officer may ratify a substitution which, because of exigent circumstances, was made before the Participant could request and/or obtain the Contracting Officer's approval.

<u>Name</u>	<u>Title</u>
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____

## ARTICLE VI. PROJECT SITE AND ACCESS

The project shall be performed principally at the following site(s): *[identify location/address of project site]*. At the request of the DOE Contracting Officer or the COR, the Participant shall provide Government officials and interested members of the public as determined by DOE with access to the project site(s) to observe project operations at reasonable times and with reasonable limitations on the numbers of people during each visit.

## ARTICLE VII. PROJECT PHASES AND ESTIMATED PROJECT COSTS

### (A) Project Phases

The project period of this Cooperative Agreement is divided into three project phases (Design, Construction, and Operation) and *[INSERT NUMBER]* budget periods. *[The expected duration of each project phase and budget period will be established during negotiations.]*

### (B) Total Estimated Project Costs

DOE and the Participant shall share in allowable direct and indirect project costs in the percentages up to the amounts shown below *[Budget Periods may be substituted for Phases in the following presentation]*:

TOTAL ESTIMATED PROJECT COST		\$	_____		
<u>Pre-award</u>	* DOE share	\$	_____	#	%
	Participant share	\$	_____		%
<u>Phase 1</u>	DOE share	\$	_____		%
	Participant share	\$	_____		%
<u>Phase 2</u>	DOE share	\$	_____		%
	Participant share	\$	_____		%
<u>Phase 3</u>	DOE share	\$	_____		%
	Participant share	\$	_____		%
<u>Total</u>	DOE share	\$	_____	#	%
	Participant share	\$	_____		%

\* Actual allowable incurred costs which shall be reimbursed as provided in Article XI of this Cooperative Agreement. [*The numbers inserted at # shall be identical.*]

#### ARTICLE VIII. PROJECT DECISION MAKING

##### (A) Project Evaluation.

Shortly after the beginning of each budget period, the Participant shall submit a Project Evaluation Plan (Plan) for DOE review and approval. The Plan must identify and describe the criteria by which the technical and economic feasibility of the project, based on the Participant's accomplishments during the budget period, are to be evaluated.

The DOE-approved Plan shall be used by the Participant to prepare a Project Evaluation Report which shall be submitted no later than 60 days before the end of the budget period. DOE shall use the approved Plan in evaluating the Participant's Evaluation Report and in deciding whether any accompanying continuation application will be approved.

##### (B) Continuation Applications.

If the Participant wishes to continue the Project beyond the current budget period, the Participant shall submit, no later than 60 days before the end of the current budget period, a continuation application which contains the following:

- 1) The Project Evaluation Report which shall describe in detail the status of the project and the technical progress made during the budget period.
- 2) A detailed description of the Participant's plan for conducting the project during the next budget period.
- 3) A detailed budget by project phase for the next budget period, including the proposed value of each in-kind contribution and an estimate of unobligated balances (see Article XII (A)).

(C) Approval/Disapproval of Continuation Applications

DOE shall approve or disapprove a timely continuation application no later than 30 days before the expiration of the current budget period. DOE will approve the continuation application provided the criteria in the approved Project Evaluation Plan are met and appropriated funds are available for the Project. In determining whether the criteria have been met, DOE will consider the Participant's Project Evaluation Report and other related information. DOE shall disapprove a continuation application if appropriated funds are unavailable or insufficient.

(D) Limitation of Cost Liability

If the Participant does not submit a continuation application (i.e., withdraws from the project) or if DOE does not make a continuation award, the liability of DOE shall be limited to its share of allowable costs incurred during the current and any previous budget period.

ARTICLE IX. PROJECT DEFINITION

Before the end of the first budget period, the Participant shall complete the project definition activities identified in the Statement of Work [as appropriate]. The Project Evaluation Report for this first budget period shall contain: an updated Project Management Plan; the Technology, Schedule, and Cost Baselines for all future project work to be performed during each subsequent budget period; and all information requested by DOE to satisfy its obligations under NEPA. Before approval of the first Continuation Application, the Participant shall deliver to DOE the signed commitments/agreements for any financing required to meet the Participant's total cost-sharing obligation under this Cooperative Agreement.

ARTICLE X. DOE FINANCIAL SUPPORT AND LIMITATIONS ON DOE FUNDING

(A) DOE Obligation

The maximum DOE obligation to the Participant is the amount identified in Block 16.b(3) of the Notice of Financial Assistance Award. DOE shall not be obligated to make any additional, supplemental, continuation, renewal, or other award for the same or any other purpose.

(B) Unallowable Project Costs For Cost Sharing

- (1) DOE shall not accept valuation for property sold, transferred, exchanged, or manipulated in any way to acquire a new basis for depreciation purposes or to establish a rental value in circumstances which would amount to a transaction for the mere purpose of responding to this PON.
- (2) DOE will not cost share in both the direct cost and depreciation on the same item. Depreciation is not allowable for cost sharing on any item previously charged to the Project as a direct cost. For example, DOE will cost share the direct cost on equipment or facilities purchased or constructed for the Project and charged as a direct cost to the Project but will not also cost share in the depreciation.
- (3) Interest on borrowing (however represented) and other financial costs such as bond discounts, costs of financing and refinancing capital (net worth plus long-term liabilities), are unallowable Project costs and will not be cost shared. This includes interest on funds borrowed for construction.
- (4) Facilities Capital Cost of Money (FCCM) as used in Federal procurement actions, shall be an unallowable cost on all real property or equipment acquired by or on behalf of the Participant in connection with the performance of the Project. However, pre-existing FCCM charges are eligible costs.

- (5) Existing facilities, equipment, and supplies, or previously expended research or development funds are not cost sharing for the purposes of this PON, except as amortized, depreciated, or expensed in normal business practice.
- (6) Fully depreciated property will not receive any cost sharing value unless it has been in continuous use by the Proposer during the entire calendar year 1991.
- (7) Foregone fees, profits, or revenues as well as replacement power costs are not allowable costs. Such costs shall not, therefore, qualify as cost sharing, nor will DOE pay any portion of such costs.
- (8) Fee or profit will not be paid to any member of the Project Team, its affiliates or parents, having a substantial and direct interest in the commercialization of the demonstration technology. Competitively placed contracts and subcontracts for routine supplies and services are not covered by this prohibition.
- (9) Patents, proprietary data, or prior work will not be valued in determining the Participant's cost share in the Demonstration Project.
- (10) Allowable costs under past, present or future government contracts, agreements or grants will not be charged against the Cooperative Agreement. Likewise, the Participant may not charge allowable costs of this Demonstration Project, including its share of cost participation, to the Federal Government under other contracts, agreements, or grants.

(C) Allowable Project Costs For Cost Sharing

DOE shall share in allowable project costs in the percentages indicated in Article VII. The allowability of direct and indirect costs incurred in the performance of the project shall be determined in accordance with the cost principles set forth in \_\_\_\_\_ [*Insert reference to appropriate cost*



*principles; refer to list in 10 C.F.R. § 600.103 (b) and § 600.442.] and the following:*

- (1) Project Specific Development Activities for process performance definition, component design verification, material selection, and evaluation of alternative designs may be funded on a cost shared basis up to 10 percent of DOE's share of Project cost. Development activities eligible for cost sharing may include limited modifications to existing facilities for Project related testing but do not include construction of new facilities.
- (2) If the current cost of operation at an existing facility, such as coal, labor or other costs, is increased as a direct result of the proposed Demonstration Project, only the incremental increase of such costs will be allowable during the course of the Project.
- (3) Unless legitimate circumstances exist which may justify otherwise, the cost or estimated value of new or existing equipment or facilities proposed for the Demonstration Project will be prorated for the purposes of cost sharing unless the item is dedicated only to the Demonstration Project and the size is not greater than that necessary for the demonstration (see Section 5.3.3.3).
- (4) The value that will be allowed for contributions of currently depreciating property is the depreciation schedule being used and allowed under statute or IRS regulations for such property. This depreciation will be limited in its cost share value to the depreciation claimed during the life of the Demonstration Project. For contributions of property by tax exempt organizations, a fair use value will be assigned to the property equivalent to the value that would be assigned were the owner not tax exempt.
- (5) For fully depreciated property contributed to the Demonstration Project and in continuous use during the entire calendar year 1991, a fair use value for the life of the facility will be assigned by DOE. The fair use value will be the average annual depreciation

used by the Proposer as permitted under statute or IRS regulations under which it was depreciated.

- (6) Contributed land will be valued at its fair rental value for the period of the Demonstration Facility.
- (7) Contributed land, equipment and facilities will be counted as cost sharing only for the periods during which they are brought into use for the Demonstration Project. For example, that portion of a facility used for housing the design team may be credited as a cost share during Phase I, but contributed equipment incorporated in the construction may be credited as a cost share only during those portions of Phases II and III when used. Property owned by one of the Project Team members and made available to the Demonstration Project will be valued according to the principles described above.
- (8) Value for contributed equipment and facilities will be assigned only to the extent that the facility or equipment is project-related.
- (9) The cost of disposal of the Demonstration Facility is an allowable cost if proposed and if accomplished during Phase III as described in the Cooperative Agreement.

(D) Program Income

- (1) Use of Program Income. Notwithstanding 10 C.F.R. § 600.113, program income may be used for any purpose.

ARTICLE XI. ALLOWABLE PREAWARD COSTS

The Participant shall be entitled to reimbursement of a portion of certain preaward costs it incurred after selection provided such costs are related to (1) the preparation of material requested by DOE and identified as required for negotiations, (2) the preparation and submission of environmental data requested by the DOE to complete NEPA requirements for the project.

## ARTICLE XII. BUDGET ADJUSTMENTS

### (A) Unobligated Balances

As used in this paragraph, "unobligated balance" means the portion of DOE funds that has not been obligated by the Participant, and is determined by subtracting the DOE share of the cumulative costs incurred from the amount of DOE funds authorized for expenditure. When the Participant has unobligated balances of funds remaining at the end of any budget period except for the last one, such funds may be used in the subsequent budget period and shall be specified and included in the total approved budget shown in an amended Notice of Financial Assistance Award. Whenever it becomes apparent during the penultimate budget period, that the amount of DOE funding authorized is expected to exceed the Participant's needs by more than five percent of DOE's share of total allowable costs, the Participant must notify DOE. DOE may reduce the award by an amount which does not exceed the total amount of excess funds.

### (B) Budget Revisions

The Participant may rebudget funds within a total approved budget, subject to the prior approval requirements of 10 C.F.R. § 600.114(b) and (e) or § 600.430(b) and (f). The Participant shall obtain prior written approval of the DOE Contracting Officer of any budget revision which would result in the need for additional DOE funding.

### (C) Additional Funds

The Participant shall immediately notify the DOE Contracting Officer in writing whenever it becomes apparent that the costs of completing that portion of the project to be performed during the budget period exceeds the total approved budget. Such written notice shall, at a minimum, set forth (1) a detailed explanation of the factors causing the cost overrun; (2) a proposed budget revision detailing the amount of additional funds needed to complete the project; and (3) the amount of additional DOE funds, if any, the Participant is requesting.

DOE is under no obligation to provide additional funds. Under no circumstances shall the Participant incur any additional costs to be cost-shared by DOE under this Cooperative Agreement without the prior written approval of the DOE Contracting Officer.

(D) DOE/Participant Share of Additional Funds

DOE is under no obligation to award additional funds to pay for costs in excess of the Total Estimated Project Cost estimated as of the date of award. If additional DOE funds are awarded, DOE's percentage share of the allowable costs will not exceed the DOE percentage share of the Total Estimated Project Cost as shown in Article VII (B) as of the date of award. Under no circumstances will the total amount of additional DOE funds awarded exceed 25% of DOE's share of the Total Estimated Project Cost indicated at block 17 of the initial Notice of Financial Assistance Award.

ARTICLE XIII. PAYMENT

(A) General

DOE shall make payments in accordance with U.S. Department of Treasury regulations. No preaward costs will be reimbursed until DOE has signed this Cooperative Agreement.

(B) Limitation on Expenditures

DOE cost sharing may be limited by the NEPA regulations at 40 C.F.R. Part § 1506.1 (limitation on actions during NEPA process). DOE funds may not be expended by the Participant on construction or operation unless and until the Contracting Officer notifies the Participant in writing that all DOE obligations under NEPA have been satisfied.

ARTICLE XIV. RIGHTS IN INTELLECTUAL PROPERTY

The rights and obligations of the parties with respect to intellectual property are set forth in clauses numbered [INSERT APPROPRIATE NUMBERS] of

Attachment B to this Cooperative Agreement which is hereby incorporated by reference.

#### ARTICLE XV. REPORTING REQUIREMENTS

Reports shall be submitted in accordance with the requirements of the Federal Assistance Reporting Checklist (Attachment C) which is hereby incorporated by reference.

#### ARTICLE XVI. PROCUREMENT

In selecting, awarding, and administering contracts under this Cooperative Agreement, the Participant shall abide by the requirements and goals set forth in this Article.

##### (A) Responsible Contractors

The Participant shall not award or approve or consent to the award of a contract to any party which is debarred or suspended or is excluded from or ineligible for participation in Federal assistance programs under the Governmentwide Debarment and Suspension (Nonprocurement) rules at 10 C.F.R. Part 1036. Copies of these rules; the DOE Consolidated List of Debarred, Suspended, Ineligible and Voluntarily Excluded Awardees (DOE List); and the General Services Administration's (GSA) List of Parties Excluded from Federal Procurement or Nonprocurement Programs (Nonprocurement List) may be obtained from the DOE Contracting Officer.

##### (B) Procurement Goals

The Participant's subcontracting plans are not required; however, the Participant will take all necessary affirmative steps to assure that small businesses, small disadvantaged businesses, women-owned small business, and labor surplus area concerns are used when possible.

(C) Contract Clauses

The Participant shall use the contract clauses in Attachment D which is hereby incorporated by reference. *[These are the known required clauses, others may be added to Attachment D during negotiations as appropriate.]*

ARTICLE XVII. INSURANCE AND INDEMNITY

In addition to any insurance which is required under paragraph (A) and which may be required under paragraph (B) of this Article, the Participant shall acquire and thereafter maintain workmen's compensation, employer's liability, comprehensive general liability (bodily injury), and comprehensive automobile liability (bodily injury and property damage) insurance, and such other insurance coverage as the Participant normally carries for similar projects. With the approval of the DOE Contracting Officer, the Participant may maintain a self-insurance program for any of the coverages specified in this Article; provided that, with respect to workmen's compensation, the Participant is qualified under applicable statutory and regulatory authority. All insurance required pursuant to the provisions of this Article shall be in such form, in such amounts, for such periods of time, and provided by such insurance carriers as the DOE Contracting Officer may approve.

(A) Hazards (Property Damage)

The Participant will provide hazard insurance (theft, fire, windstorm, water damage, etc.) covering the materials, equipment, and structures acquired or constructed under this Cooperative Agreement. Proceeds from such insurance may be used to replace the damaged or destroyed property. If the Participant decides not to replace or repair the property, the insurance proceeds will be paid to DOE in the same ratio as the cost share formula applicable to the budget period of the Cooperative Agreement when the equipment or property was purchased.

(B) Flood Insurance

If funds under this Cooperative Agreement are used to acquire or construct property or equipment for use in an identified flood plain area in the United

States having special flood, special flood-related erosion, or special mudslide (i.e., mud-flow) hazards, the Participant shall obtain flood insurance<sup>a</sup> as required by the Flood Disaster Protection Act of 1973 (42 U.S.C. 4002, 4012a, 4105), as amended. Proceeds from such insurance may be used to replace the damaged or destroyed property. If the Participant decides not to replace or repair the property, the insurance proceeds will be paid to DOE in the same ratio as the cost share formula applicable to the budget period of the Cooperative Agreement when the equipment or property was purchased.

(C) Indemnity

The Participant shall indemnify the Government and its officers, agents, or employees for any and all liability, including litigation expenses and attorneys' fees, arising from suits, actions, or claims of any character for death, bodily injury, or loss of or damage to property or to the environment, resulting from the fault or negligence of the Participant in performing the project under this Cooperative Agreement.

ARTICLE XVIII. BONDING FOR CONSTRUCTION

The Participant shall require any construction contractor or subcontractor to obtain performance and payment bonds for any construction project in accordance with practices approved by the Contracting Officer.

ARTICLE XIX. PROPERTY MANAGEMENT AND DISPOSITION

Title to all real property, equipment and supplies (excluding Government-furnished property) acquired by or on behalf of the Participant in connection with performance of the project shall vest upon acquisition in the Participant. The Participant shall make such property available for use in the project. During the period of this Cooperative Agreement, the Participant may, with the DOE Contracting Officer's prior approval, encumber its title to or dispose of such property.

The use, management, and disposition of all Government-furnished property shall be governed by 10 C.F.R. § 600.117 [or 10 C.F.R. §§ 600.431, 600.432, and 600.433].

## ARTICLE XX. TERMINATION

### (A) Termination by Mutual Agreement

This Cooperative Agreement may be terminated, in whole or in part, by mutual agreement at any time. The initiation and negotiation of such a termination shall be conducted in accordance with the procedures set forth in 10 C.F.R. § 600.29(d).

### (B) Termination for Cause

DOE may terminate the Cooperative Agreement, in whole or in part, for cause (i.e., on the basis of a noncompliance determination). DOE shall provide advance written notice, as required by 10 C.F.R. § 600.28, of any noncompliance determination (with a minimum 30-day opportunity to cure the non-compliance) and of any subsequent decision to terminate for cause. The Cooperative Agreement may not be terminated for delays in performance caused by fires, floods, strikes, acts or omissions of the Government, acts of God, or similar causes which are beyond the control of the Participant.

### (C) Effect of Termination

DOE shall have no liability for paying the costs of any new obligations incurred by the Participant after the effective date of the termination of this Cooperative Agreement (or portion thereof). DOE shall pay its share of all noncancellable obligations properly incurred by the Participant before the effective date of the termination.

## ARTICLE XXI. DISPUTES AND APPEALS

The Participant shall have the right, as specified in 10 C.F.R. § 600.26, to appeal to the Financial Assistance Appeals Board (the Board) any of the following adverse determinations or decisions:



- 1) A determination that the Participant has failed to comply with the terms and conditions of this Cooperative Agreement, with the requirements of 10 C.F.R. Part 600, or with the requirements of Pub. L. 101-121;
- 2) A DOE decision not to make a continuation award based on any of the determinations described in the preceding paragraph, including any determination that the Participant's performance of the project has not met the requirements of the approved Project Evaluation Plan;
- 3) A DOE termination of this Cooperative Agreement, in whole or in part, for cause;
- 4) A DOE determination that this Cooperative Agreement is void or invalid;
- 5) The application by DOE of an indirect cost rate; and
- 6) DOE disallowance of costs, including those incurred after selection but before award.

A DOE decision not to make a continuation award which is based on the unavailability of sufficient appropriated funds or on the failure to satisfy NEPA requirements may not be appealed to the Board.

## ARTICLE XXII. RECORDS RETENTION, ACCESS, AND DISCLOSURE

### (A) Period of Retention

The Participant shall retain all financial and performance records, supporting documents, statistical records, and other records of the Participant which are required to be retained by the terms of this Cooperative Agreement, and any other records the Participant reasonably considers to be pertinent to this Cooperative Agreement. The period of required retention shall be from the date each such record is created or received by the Participant until three years after one of the following dates, whichever is latest: the expiration date of this Cooperative Agreement; the date the Participant's final expenditure report is submitted to DOE; or if this Cooperative Agreement is terminated in its entirety, the

concerning work performed under this Cooperative Agreement. Information shall not be released to the public without first obtaining the approval of the DOE Contracting Officer or the COR.

#### ARTICLE XXIV. LEGAL NOTICE/DISCLAIMER

The following notice shall be contained in all reports intended to be released to the public:

This report was prepared by \_\_\_\_\_ pursuant to a Cooperative Agreement partially funded by the U.S. Department of Energy, and neither \_\_\_\_\_ nor any of its subcontractors nor the U.S. Department of Energy, nor any person acting on behalf of either:

(A) Makes any warranty or representation, express or implied, with respect to the accuracy, completeness, or usefulness of the information contained in this report, or that the use of any information, apparatus, method, or process disclosed in this report may not infringe privately-owned rights; or

(B) Assumes any liabilities with respect to the use of, or for damages resulting from the use of, any information, apparatus, method or process disclosed in this report.

Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the U.S. Department of Energy. The views and opinions of authors expressed herein do not necessarily state or reflect those of the U.S. Department of Energy.

#### ARTICLE XXV. COMMERCIALIZATION

The Participant agrees to exercise its best efforts to commercialize, or to assist others to commercialize, in the United States, [*INSERT the name of the technology*].

#### ARTICLE XXVI. INTEREST

(A) Notwithstanding any other term or condition of this Agreement, all amounts that become payable by the Participant to the Government under this Agreement shall bear simple interest from the date due until paid, unless paid within 30 days of becoming due. The

interest rate shall be the interest rate established by the Secretary of the Treasury (Secretary) as provided in Section II of the Debt Collection Act of 1982 (31 U.S.C. 3717), which is applicable to the period in which the amount becomes due, as provided in Paragraph B of this provision, and then at the rate applicable for each 3-month period as fixed by the Secretary until the amount is paid.

(B) Amounts shall be due at the earliest of the following dates:

- 1) The date fixed under this Agreement.
- 2) The date of the first written demand for payment consistent with this Agreement, including any demand resulting from a termination.
- 3) The date the Government transmits to the Participant a proposed agreement to confirm completed negotiation establishing the amount of debt.

(C) The interest charge made under this provision may be reduced in accordance with the procedures prescribed in 4 C.F.R. Paragraph 102.13 or in accordance with agency regulations in effect on the date of original award of this Agreement.

(D) The requirements of this article do not apply to any amounts due the Government under operation of the Repayment Agreement.

#### ARTICLE XXVII. ORDER OF PRECEDENCE

In the event of an inconsistency between provisions of this Agreement, the inconsistency shall be resolved by giving precedence as follows: (a) statutory provisions governing the Clean Coal Technology Program; (b) the Schedule of Articles and Attachments; (c) 10 C.F.R. Part 600; and (d) other provisions of the Agreement whether incorporated by reference or otherwise.

ARTICLE XXVIII. SEVERABILITY

If a court of competent jurisdiction or the DOE Financial Assistance Appeals Board determines that any part of this Cooperative Agreement is invalid, void, unenforceable, or inconsistent with any applicable Federal statute or regulation, such part shall be deemed to have been amended or deleted to conform to such determination.

ATTACHMENT A

STATEMENT OF WORK

## STATEMENT OF WORK

Section 5.3.6.1 of the PON requires the proposer to provide a SOW with the proposal package. The proposed SOW will become the basis for this attachment of the Cooperative Agreement. In addition, the Project Schedule will be part of this attachment.

**ATTACHMENT B**

**INTELLECTUAL PROPERTY PROVISIONS  
FOR  
COST-SHARING COOPERATIVE AGREEMENT**

## INTELLECTUAL PROPERTY PROVISIONS FOR COST-SHARING COOPERATIVE AGREEMENT

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### **Note to Participant:**

In these clauses, the term "Contract" means Cooperative Agreement, and the term "Contractor" means Participant, unless the content of the clause clearly indicates otherwise. The use of the term "subcontractor" in any of the provisions means contractor to the Participant and all tiers of Subcontractor thereunder unless the conditions for use of a provision as set forth in the applicable regulations provide otherwise.



1. REPORTING OF ROYALTIES (10 C.F.R. § 600.33 (C)(2))

If the Cooperative Agreement is in an amount which exceeds \$10,000 and if any royalty payments are directly involved in the Cooperative Agreement or are reflected in the Cooperative Agreement price to the Government, the Participant agrees to report in writing to the Patent Counsel (with notification by Patent Counsel to the Contracting Officer) during the performance of this Cooperative Agreement and prior to its completion or final settlement, the amount of any royalties or other payments paid or to be paid by it directly to others in connection with the performance of this Cooperative Agreement together with the names and addresses of licensors to whom such payments are made and either the patent numbers involved or such other information as will permit the identification of the patents or other basis on which the royalties are to be paid. The approval of DOE of any individual payments or royalties shall not stop the Government at any time from contesting the enforceability, validity or scope of, or title to, any patent under which a royalty or payments are made.

2. AUTHORIZATION AND CONSENT (10 C.F.R. § 600.33(b)(5))

The Government hereby gives its authorization and consent for all use and manufacture of any invention described in and covered by a patent of the United States in the performance of this Cooperative Agreement or any part hereto or any amendment hereto or any subcontract hereunder (including all lower tier subcontracts).

3. NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT (10 C.F.R. § 600.33(b)(6))

The provisions of this clause shall be applicable only if the amount of this Cooperative Agreement exceeds \$10,000.

- (a) The Participant shall report to the Contracting Officer, promptly and in reasonable written detail, each notice or claim of patent or copyright infringement based on the performance of this Cooperative Agreement of which the Participant has knowledge.
- (b) In the event of any claim or suit against the Government on account of any alleged patent or copyright infringement arising out of the performance of this Cooperative Agreement or out of the use of any supplies furnished or work or services performed hereunder, the Participant shall furnish to the Government when requested by the Contracting Officer all evidence and information in possession of the Participant pertaining to such suit or claim. Such evidence and information shall be furnished at the expense of the Government except where the Participant has agreed to indemnify the Government.
- (c) This clause shall be included in all subcontracts.

4. PATENT INDEMNITY (41 C.F.R. § 9-9.103-3(b))

The Participant shall indemnify the Government and its officers, agents, and employees against liability, including costs, for infringement of U.S. Letters Patent (except U.S. Letters Patent issued upon an application which is now or may hereafter be kept secret or otherwise withheld from issue by order of the Government) resulting from the Participant's (a) furnishing or supplying standard parts or components which have been sold or offered for sale to public on the commercial open market; (b) utilizing its normal practices or methods which normally are or have been used in providing goods and services in the commercial open market in the performance of the Cooperative Agreement; or (c) utilizing any parts, components, practices, or methods to the extent to which the Participant has secured indemnification from liability. The foregoing indemnity shall not apply unless the Participant shall have been informed as soon as practicable by the Government of the suit or action alleging such infringement and shall have been given such opportunity as is afforded by applicable laws, rules, or regulations to participate in the defense thereof; and further, such indemnity shall not apply to a claimed infringement which is settled without the consent of the Participant unless required by final decree of a court of competent jurisdiction or to an infringement resulting from addition to or change in such supplies or components furnished or construction work performed for which addition or change was made subsequent to delivery or performance by the Participant.

5. ADDITIONAL TECHNICAL DATA REQUIREMENTS (48 C.F.R. § 952.227-73)

- (a) In addition to the technical data specified elsewhere in this Cooperative Agreement to be delivered, the Contracting Officer may, at any time during the Cooperative Agreement performance or within 1 year after final payment, call for the Participant to deliver any technical data first produced or specifically used in the performance of this Cooperative Agreement, except technical data pertaining to items of standard commercial design.
- (b) The provisions of the Rights in Technical Data clause included in this Cooperative Agreement are applicable to all technical data called for under this Additional Technical Data Requirements clause. Accordingly, nothing contained in this clause shall require the Participant to actually deliver any technical data, the delivery of which is excused by Paragraph (e) of the Rights in Technical Data clause.
- (c) When technical data are to be delivered under this clause, the Participant will be compensated for appropriate costs for converting such data into the prescribed form for reproduction, and for delivery.

6. RIGHTS TO PROPOSAL DATA (10 C.F.R. § 600.33(b)(1))

Except for technical data contained on pages \_\_\_\_\_ of the Participant's proposal dated \_\_\_\_\_ which are asserted by the Participant as being proprietary data, it is agreed that, as a condition of the award of this Cooperative Agreement, and notwithstanding the provisions of any notice appearing on the proposal, the Government shall have the right to use, duplicate, disclose, and have others do so for any purpose whatsoever, the technical data contained in the proposal upon which this Cooperative Agreement is based.

7. PATENT RIGHTS -- SMALL BUSINESS FIRMS OR NONPROFIT ORGANIZATIONS  
(37 C.F.R. § 401.14 (a))

(a) Definitions.

- (1) "Invention" means any invention or discovery which is or may be patentable or otherwise protectable under Title 35 of the United States Code (U.S.C.) or any novel variety of plant which is or may be protected under the Plant Variety Protection Act (7 U.S.C. 2321 et seq.).
- (2) "Subject invention" means any invention of the Contractor conceived or first actually reduced to practice in the performance of work under this Cooperative Agreement, provided that in the case of a variety of plant the date of determination (as defined in section 4(d) of the Plant Variety Protection Act, 7 U.S.C. 2401(d) must also occur during the period of contract performance.
- (3) "Practical application" means to manufacture in the case of a composition or product, to practice in the case of a process or method, or to operate in the case of a machine or system; and, in each case, under such conditions as to establish that the invention is utilized and that its benefits are, to the extent permitted by law or Government regulations, available to the public on reasonable terms.
- (4) "Made" when used in relation to any invention means the conception or first actual reduction to practice of such invention.
- (5) "Small business firm" means a small business concern as defined at Section 2 of P.L. 85-536 (15 U.S.C. 632) and implementing regulations of the Administrator of the Small Business Administration. For the purpose of this clause, the size standard for small business concerns involved in Government procurement and subcontracting, at 13 C.F.R. 121.3-8 and 13 C.F.R. 121.3-12, respectively, will be used.

- (6) "Nonprofit organization" means a university or other institution of higher education or an organization of the type described in Section 501(c)(3) of the Internal Revenue Code of 1954 (26 U.S.C. 501(c) and exempt from taxation under Section 501(a) of the Internal Revenue Code (26 U.S.C. 501(a)) or any nonprofit scientific or educational organization qualified under a state nonprofit organization statute.
  - (7) "Patent counsel" means the Department of Energy (DOE) patent counsel assisting the DOE contracting activity.
- (b) Allocation of principal rights.
- (1) The Contractor may retain the entire right, title, and interest throughout the world to each subject invention subject to the provisions of this clause and 35 U.S.C. 203. With respect to any subject invention in which the Contractor retains title, the Federal Government shall have a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States the subject invention throughout the world.
  - (2) (Reserved.)
- (c) Invention disclosure, election of title and filing of patent application by Contractor.
- (1) The Contractor will disclose each subject invention to the Patent Counsel within 2 months after the inventor discloses it in writing to Contractor personnel responsible for patent matters. The disclosure to the Patent Counsel shall be in the form of a written report and shall identify the Cooperative Agreement under which the invention was made and the inventor(s). It shall be sufficiently complete in technical detail to convey a clear understanding, to the extent known at the time of the disclosure of the nature, purpose, operation, and the physical, chemical, biological or electrical characteristics of the invention. The disclosure shall also identify any publication, on sale or public use of the invention and whether a manuscript describing the invention has been submitted for publication and, if so, whether it has been accepted for publication at the time of disclosure. In addition, after disclosure to the Patent Counsel, the Contractor will promptly notify the Patent Counsel of the acceptance of any manuscript describing the invention for publication or of any on sale or public use planned by the Contractor.

- (2) The Contractor will elect in writing whether or not to retain title to any such invention by notifying the Patent Counsel within 2 years of disclosure to the Patent Counsel. However, in any case where publication, on sale or public use has initiated the 1-year statutory period wherein valid patent protection can still be obtained in the United States, the period for election of title may be shortened by Patent Counsel to a date that is no more than 60 days prior to the end of the statutory period.
  - (3) The Contractor will file its initial patent application on a subject invention to which it elects to retain title within 1 year after election of title or, if earlier, prior in the end of any statutory period wherein valid patent protection can be obtained in the United States after a publication, on sale, or public use. The Contractor will file patent applications in additional countries or international patent offices within either 10 months of the corresponding initial patent application or 6 months from the date permission is granted by the Commissioner of Patents and Trademarks to file foreign patent applications where such filing has been prohibited by a Secrecy Order.
  - (4) Requests for extension of the time for disclosure to the Patent Counsel, election, and filing, under subparagraphs (1), (2), and (3) may, at the discretion of the Patent Counsel be granted.
- (d) Conditions when the Government may obtain title.

The Contractor will convey to the DOE, upon written request, title to any subject invention:

- (1) If the Contractor fails to disclose or elect title to the subject invention within the times specified in (c) above, or elects not to retain title; provided that the DOE may only request title within 60 days after learning of the failure of the Contractor to disclose or elect within the specified times;
- (2) In those countries in which the Contractor fails to file patent applications within the times specified in (c) above; provided, however, that if the Contractor has filed a patent application in a country after the times specified in (c) above but prior to its receipt of the written request of the Patent Counsel, the Contractor shall continue to retain title in that country; or
- (3) In any country in which the Contractor decides not to continue the prosecution of any application for, to pay the maintenance fees on, or defend in a reexamination or opposition proceeding on, a patent on a subject invention.

(e) Minimum rights to Contractor and protection of the Contractor right to file.

- (1) The Contractor will retain a nonexclusive royalty-free license throughout the world in each subject invention to which the Government obtains title except if the Contractor fails to disclose the subject invention within the times specified in (c) above. The Contractor's license extends to its domestic subsidiaries and affiliates, if any, within the corporate structure of which the Contractor is a part and includes the right to grant sublicenses of the same scope to the extent the Contractor was legally obligated to do so at the time the Cooperative Agreement was awarded. The license is transferable only with the approval of DOE except when transferred to the successor of the part of the Contractor's business to which the invention pertains.
- (2) The Contractor's domestic license may be revoked or modified by DOE to the extent necessary to achieve expeditious practical application of the subject invention pursuant to an application for an exclusive license submitted in accordance with applicable provisions at 37 C.F.R. 404 and 10 C.F.R. Part 781. This license will not be revoked in that field of use or the geographical areas in which the Contractor has achieved practical application and continues to make the benefits of the invention reasonably accessible to the public. The license in any foreign country may be revoked or modified at the discretion of DOE to the extent the Contractor, its licensees, or its domestic subsidiaries or affiliates have failed to achieve practical application in that foreign country.
- (3) Before revocation or modification of the license, DOE will furnish the Contractor a written notice of its intention to revoke or modify the license, and the Contractor will be allowed 30 days (or such other time as may be authorized by DOE for good cause shown by the Contractor) after the notice to show cause why the license should not be revoked or modified. The Contractor has the right to appeal in accordance with 37 C.F.R. 404 and 10 C.F.R. Part 781, any decision concerning the revocation or modification of its license.

(f) Contractor action to protect the Government's interest.

- (1) The Contractor agrees to execute or to have executed and promptly deliver to the Patent Counsel all instruments necessary to:
  - (i) Establish or confirm the rights the Government has throughout the world in those subject inventions to which the Contractor elects to retain title, and

- (ii) Convey title to DOE when requested under (d) above and to enable the Government to obtain patent protection throughout the world in that subject invention.
- (2) The Contractor agrees to require, by written agreement, its employees, other than clerical and nontechnical employees, to disclose promptly in writing to personnel identified as responsible for the administration of patent matters and in a format suggested by the Contractor each subject invention made under this Cooperative Agreement in order that the Contractor can comply with the disclosure provisions of (c) above and to execute all papers necessary to file patent applications on subject inventions and to establish the Government's rights in the subject inventions. The disclosure format should require, as a minimum, the information required by (c)(1) above. The contract shall instruct such employees through the employee agreements or other suitable educational programs on the importance of reporting inventions in sufficient time to permit the filing of patent applications prior to United States or foreign statutory bars.
- (3) The Contractor will notify the Patent Counsel of any decision not to continue prosecution of a patent application, pay maintenance fees, or defend in a reexamination or opposition proceeding on a patent, in any country, not less than 30 days before the expiration of the response period required by the relevant patent office.
- (4) The Contractor agrees to include, within the specification of any United States patent applications and any patent issuing thereon covering a subject invention, the following statement "This invention was made with Government support under (identify the Cooperative Agreement) awarded by the Department of Energy. The Government has certain rights in this invention."
- (5) The Contractor agrees to:
  - (i) Upon request, provide a report prior to the close-out of the Cooperative Agreement listing all subject inventions or stating that there were none;
  - (ii) Provide, upon request, a copy of the patent application, filing date, serial number and title, patent number and issue date for any subject invention in any country in which the Contractor has applied for a patent; and

- (iii) Provide upon request but not more than annually, listings of all subject inventions which were disclosed to DOE during the applicable reporting period.

(g) Subcontracts.

- (1) The Contractor will include this clause, suitably modified to identify the parties, in all subcontracts, regardless of tier, for experimental, developmental, or research work to be performed by a small business firm or a domestic nonprofit organization. The subcontractor will retain all rights provided for the Contractor in this clause, and the Contractor will not, as part of the consideration for awarding the subcontract, obtain rights in the subcontractor's subject inventions.
- (2) The Contractor will include in all other subcontracts, regardless of tier, for experimental, developmental, demonstration, or research work the patent rights clause of 41 C.F.R. 9-9.107-5(a) or 9-9.107-6 as appropriate, modified to identify the parties.
- (3) In the case of subcontracts at any tier, when the prime award with DOE was a contract (but not a grant or Cooperative Agreement) DOE, the subcontractor, and the Contractor agree that the mutual obligation of the parties created by this clause constitute a contract between the subcontractor and DOE with respect to those matters covered by this clause; provided, however, that nothing in this paragraph is intended to confer any jurisdiction under the Contracts Disputes Act in connection with proceedings under paragraph (j) of this clause.

(h) Reporting on utilization of subject inventions.

The Contractor agrees to submit on request periodic reports no more frequently than annually on the utilization of a subject invention or on efforts at obtaining such utilization that are being made by the Contractor or its licensees or assignees. Such reports shall include information regarding the status of development, date of first commercial sale or use, gross royalties received by the Contractor, and such other data and information as DOE may reasonably specify. The Contractor also agrees to provide additional reports as may be requested by DOE in connection with any march-in proceeding undertaken by DOE in accordance with paragraph (j) of this clause. As required by 35 U.S.C. 202(c)(5), DOE agrees it will not disclose such information to persons outside the Government without permission of the Contractor.



(i) Preference for United States industry.

Notwithstanding any other provision of this clause, the Contractor agrees that neither it nor any assignee will grant to any person the exclusive right to use or sell any subject inventions in the United States unless such person agrees that any products embodying the subject invention or produced through the use of the subject invention will be manufactured substantially in the United States. However, in individual cases, the requirement for such an agreement may be waived by DOE upon a showing by the Contractor or its assignee that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States or that under the circumstances domestic manufacture is not commercially feasible.

(j) March-in-rights.

The Contractor agrees that with respect to any subject invention in which it has acquired title, DOE has the right in accordance with the procedures in 37 C.F.R. 401.6 and any supplemental regulations of DOE to require the Contractor, an assignee or exclusive licensee of a subject invention to grant a nonexclusive, partially exclusive, or exclusive license in any field of use to a responsible applicant or applicants, upon terms that are reasonable under the circumstances, and if the Contractor, assignee, or exclusive licensee refuses such a request, DOE has the right to grant such a license itself if DOE determines that:

- (1) Such action is necessary because the Contractor or assignee has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of the subject invention in such field of use;
- (2) Such action is necessary to alleviate health or safety needs which are not reasonably satisfied by the Contractor, assignee, or their licensees;
- (3) Such action is necessary to meet requirements for public use specified by Federal regulations and such requirements are not reasonably satisfied by the Contractor, assignee, or licensees; or
- (4) Such action is necessary because the agreement by paragraph (i) of this clause has not been obtained or waived or because of licensee of the exclusive right to use or sell any subject invention in the United States is in breach of such agreement.

(k) Special provisions for contracts with nonprofit organizations.

If the Contractor is a nonprofit organization it agrees that:

- (1) Rights to a subject invention in the United States may not be assigned without the approval of DOE, except where such assignment is made to an organization which has as one of its primary functions the management of inventions, provided that such assignee will be subject to the same provisions as the Contractor;
- (2) The Contractor will share royalties collected on a subject invention with the inventor, including Federal employee coinventors (when DOE deems it appropriate) when the subject invention is assigned in accordance with 35 U.S.C. 202 (e) and 37 C.F.R. 401.10;
- (3) The balance of any royalties or income earned by the Contractor with respect to subject inventions, after payment of expenses (including payments to inventors) incidental to the administration of subject inventions, will be utilized for the support of scientific research or education; and
- (4) It will make efforts that are reasonable under the circumstances to attract licensees of subject inventions that are small business firms and that it will give a preference to a small business firm when licensing a subject invention if the Contractor determines that the small business firm has a plan or proposal for marketing the invention which, if executed, is equally as likely to bring the invention to practical application as any plans or proposals from applicants that are not small business firms; provided that the Contractor is also satisfied that the small business firm has the capability and resources to carry out its plan or proposal. The decision whether to give a preference in any specific case will be at the discretion of the Contractor. However, the Contractor agrees that the Secretary of Commerce may review the Contractor's licensing program and decisions regarding small business applicants, and the Contractor will negotiate changes to its licensing policies, procedures, or practices with the Secretary of Commerce when the Secretary of Commerce's review discloses that the Contractor could take reasonable steps to implement more effectively the requirements of this paragraph (k) (4).

- (l) Communications. The DOE central point of contact for communications or matters relating to this clause is the Patent Counsel.

8. PATENT RIGHTS (Long Form) (41 C.F.R. § 9-9.107-5(a))

(a) Definitions

- (1) "Subject Invention" means any invention or discovery of the Participant conceived or first actually reduced to practice in the course of or under this Cooperative Agreement, and includes any art, method, process, machine manufacture, design or composition of matter, or any new and useful improvement thereof, or any variety of plants, whether patented or unpatented under the Patent Laws of the United States of America or any foreign country.
- (2) "Contract" means any contract, grant, agreement, understanding, or other arrangement, which includes research, development, or demonstration work, and includes any assignment or substitution of parties.
- (3) "States and domestic municipal governments" means the States of the United States, the District of Columbia, Puerto Rico, the Virgin Islands, American Samoa, Guam, the Trust Territory of the Pacific Islands, and any political subdivision and agencies thereof.
- (4) "Government agency" includes an executive department, independent commission, board, office, agency, administration, authority, Government corporation, or other Government establishment of the Executive Branch of the Government of the United States of America.
- (5) "To the point of practical application" means to manufacture, in the case of a composition or product, to practice in the case of a process, or to operate in the case of a machine and under such conditions as to establish that the invention is being worked and that its benefits are reasonably accessible to the public.
- (6) "Patent Counsel" means the Department of Energy Patent Counsel assisting the DOE activity.

(b) Allocation of Principal Rights

- (1) Assignment to the Government -- The Participant agrees to assign to the Government the entire right, title, and interest throughout the world in and to each Subject Invention, except to the extent that rights are retained by the Participant under Subparagraph (b)(2) and Paragraph (c) of this clause.

- (2) Greater Rights Determinations -- The Participant or the employee-inventor with authorization of the Participant may request greater rights than the nonexclusive license and the foreign patent rights provided in Paragraph (c) of this clause on identified inventions in accordance with 41 C.F.R. 9-9.109-6d. Such requests must be submitted to Patent Counsel (with notification by Patent Counsel to the Contracting Officer) at the time of the first disclosure pursuant to Subparagraph (e)(2) of this clause, or not later than 9 months after conception or first actual reduction to practice, whichever occurs first, or such longer periods as may be authorized by Patent Counsel (with notification by Patent Counsel to the Contracting Officer) for good cause shown in writing by the Participant.

(c) Minimum Rights to the Participant

- (1) Participant License -- The Participant reserves a revocable, non-exclusive, paid-up license in each patent application filed in any country on a Subject Invention and any resulting patent in which the Government acquires title. The license shall extend to the Participant's domestic subsidiaries and affiliates, if any, within the corporate structure of which the Participant is a part and shall include the right to grant sublicenses of the same scope to the extent the Participant was legally obligated to do so at the time the contract was awarded. The license shall be transferable only with approval of DOE except when transferred to the successor of that part of the Participant's business to which the invention pertains.
- (2) Revocation Limitations -- The Participant's nonexclusive license retained pursuant to Subparagraph (c)(1) of this clause and sublicenses granted thereunder may be revoked or modified by DOE, either in whole or in part, only to the extent necessary to achieve expeditious practical application of the Subject Invention under DOE's published licensing regulations (10 C.F.R. 781), and only to the extent an exclusive license is actually granted. This license shall not be revoked in that field of use and/or the geographical areas in which the Participant, or its sublicensee, has brought the invention to the point of practical application and continues to make the benefits of the invention reasonably accessible to the public, or is expected to do so within a reasonable time.

- (3) Revocation Procedures -- Before modification or revocation of the license or sublicense, pursuant to Subparagraph (c)(2) of this clause, DOE shall furnish the Participant a written notice of its intention to modify or revoke the license and any sublicense thereunder, and the Participant shall be allowed 30 days, or such longer period as may be authorized by the Patent Counsel (with notification by Patent Counsel to the Contracting Officer), for good cause shown in writing by the Participant, after such notice to show cause why the license or any sublicense should not be modified or revoked. The Participant shall have the right to appeal, in accordance with 10 C.F.R. 781, any decision concerning the modification or revocation of its license or any sublicense.
- (4) Foreign Patent Rights -- Upon written request to the Patent Counsel (with notification by Patent Counsel to the Contracting Officer) and subject to DOE security regulations and requirements, there shall be reserved to the Participant, or the employee-inventor with authorization of the Participant, the patent rights to a Subject Invention in any foreign country where the Government has elected not to secure such rights provided:
- (i) The recipient of such rights, when specifically requested by DOE and 3 years after issuance of a foreign patent disclosing said Subject Invention, shall furnish DOE a report setting forth:
    - (A) The commercial use that is being made, or is intended to be made, of said invention, and
    - (B) The steps taken to bring the invention to the point of practical application or to make the invention available for licensing.
  - (ii) The Government shall retain at least an irrevocable, nonexclusive, paid-up license to make, use, and sell the invention throughout the world by or on behalf of the Government (including any Government agency) and States and domestic municipal governments unless the Secretary or his designee determines that it would not be in the public interest to acquire the license for the State and domestic municipal governments.

- (iii) Subject to the rights granted in Subparagraphs (c)(1), (2), and (3) of this clause, the Secretary or his designee shall have the right to terminate the foreign patent rights granted in this Subparagraph (c)(4) in whole or in part unless the recipient of such rights demonstrates to the satisfaction of the Secretary or his designee that effective steps necessary to accomplish substantial utilization of the invention have been taken or within a reasonable time will be taken.
- (iv) Subject to the rights granted in Subparagraphs (c)(1), (2), and (3) of this article, the Secretary or his designee shall have the right, commencing 4 years after foreign patent rights are accorded under this Subparagraph (c)(4), to require the granting of a nonexclusive or partially exclusive license to a responsible applicant or applicants, upon terms reasonable under the circumstances, and in appropriate circumstances to terminate said foreign patent rights in whole or in part, following a hearing upon notice thereof to the public, upon a petition by an interested person justifying such hearing:
  - (A) If the Secretary or his designee determines, upon review of such material as he deems relevant, and after the recipient of such rights or other interested person has had the opportunity to provide such relevant and material information as the Secretary or his designee may require that such foreign patent rights have tended substantially to lessen competition, or to result in undue market concentration in any section of the United States in any line of commerce to which the technology relates; or
  - (B) Unless the recipient of such rights demonstrates to the satisfaction of the Secretary or his designee at such hearing that the recipient has taken effective steps or within a reasonable time thereafter is expected to take such steps, necessary to accomplish substantial utilization of the invention.

(d) Filing of Patent Applications

- (1) With respect to each Subject Invention in which the Participant or the inventor requests foreign patent rights in accordance with Subparagraph (c)(4) of this clause, a request may also be made for the right to file and prosecute the U.S. application on behalf of the U.S. Government. If such request is granted, the Participant or inventor shall file a domestic patent application on the invention within 6 months after the request for foreign patent rights is granted, or such longer period of time as may be approved by Patent Counsel for good cause shown in writing by the requestor. With respect to the invention, the requestor shall promptly notify the Patent Counsel (with notification by Patent Counsel to the Contracting Officer) of any decision not to file an application.
- (2) For each Subject Invention on which a domestic patent application is filed by the Participant or inventor, the Participant or inventor shall:
  - (i) Within 2 months after the filing of a patent application or within 2 months after submission of the invention disclosure if the patent application has been filed previously, deliver to the Patent Counsel a copy of the application as filed including the filing date and serial number;
  - (ii) Within 6 months after filing the application or within 6 months after submitting the invention disclosure if the application has been filed previously, deliver to the Patent Counsel a duly executed and approved assignment to the Government, on a form specified by the Government;
  - (iii) Provide the Patent Counsel with the original patent grant promptly after a patent is issued on the application; and
  - (iv) Not less than 30 days before the expiration of the response period for any action required by the Patent and Trademark Office, notify the Patent Counsel of any decision not to continue prosecution of the application.
- (3) With respect to each Subject Invention in which the Participant or inventor has requested foreign patent rights, the Participant or inventor shall file a patent application on the invention in each foreign country in which such request is granted in accordance with applicable statutes and regulations and within one of the following periods:

- (i) Eight months from the date of filing a corresponding United States application, or if such an application is not filed, 6 months from the date the request was granted;
    - (ii) Six months from the date a license is granted by the Commissioner of Patents and Trademarks to file the foreign patent application where such filing has been prohibited by security reasons; or
    - (iii) Such longer periods as may be approved by the Patent Counsel for good cause shown in writing by the Participant or inventor.
  - (4) Subject to the license specified in Subparagraphs (c)(1), (2), and (3) of this clause, the Participant or inventor agrees to convey to the Government upon request the entire right, title, and interest in any foreign country in which the Participant or inventor fails to have a patent application filed in accordance with Subparagraph (d)(3) of this clause, or decides not to continue prosecution or to pay any maintenance fees covering the invention. To avoid forfeiture of the patent application or patent, the Participant or inventor shall, not less than 60 days before the expiration period for any action required by any Patent Office, notify the Patent Counsel of such failure or decision, and deliver to the Patent Counsel the executed instruments necessary for the conveyance specified in this paragraph.
- (e) Invention Identification, Disclosures, and Reports
- (1) The Participant shall establish and maintain active and effective procedures to ensure that Subject Inventions are promptly identified and timely disclosed. These procedures shall include the maintenance of laboratory notebooks or equivalent records and any other records that are reasonably necessary to document the conception and/or the first actual reduction to practice of Subject Inventions, and records which show that the procedures for identifying and disclosing the inventions are followed. Upon request the Participant shall furnish the Contracting Officer a description of these procedures so that he may evaluate and determine their effectiveness.
  - (2) The Participant shall furnish the Patent Counsel (with notification by Patent Counsel to the Contracting Officer) on a DOE-approved form:



- (i) A written report containing full and complete technical information concerning each Subject Invention within 6 months after conception or first actual reduction to practice whichever occurs first in the course of or under this Cooperative Agreement but in any event prior to any sale, public use, or public disclosure of such invention known to the Participant. The report shall identify the contract and inventor and shall be sufficiently complete in technical detail and appropriately illustrated by sketch or diagram to convey to one skilled in the art to which the invention pertains a clear understanding of the nature, purpose, operation, and to the extent known the physical, chemical, biological, or electrical characteristics of the invention. The report should also include any request for foreign patent rights under Subparagraph (c)(4) of this clause and any request to file a domestic patent application under (d)(1) of this clause. However, such request shall be made within the period set forth in Subparagraph (b)(2) of this clause. When an invention is reported under this Subparagraph (e)(2)(i), it shall be presumed to have been conceived or first actually reduced to practice in the course of or under the contract, unless the Participant contends it was not so made, in accordance with Subparagraph (g)(2)(ii) of this clause.
- (ii) Upon request, but not more than annually, interim reports on a DOE-approved form listing Subject Inventions and subcontracts awarded containing a Patent Rights clause for that period and certifying that:
  - (A) The Participant's procedures for identifying and disclosing Subject Inventions as required by this Paragraph (e) have been followed throughout the reporting period;
  - (B) All Subject Inventions have been disclosed or that there are no such inventions; and
  - (C) All subcontracts containing a Patent Rights clause have been reported or that no such subcontracts have been awarded; and
- (iii) A final report on a DOE-approved form within 3 months after completion of the contract work listing all Subject Inventions and all subcontracts awarded containing a Patent Rights clause and certifying that:

- (A) All Subject Inventions have been disclosed or that there were no such inventions; and
  - (B) All subcontracts containing a Patent Rights clause have been reported or that no such subcontracts have been awarded.
- (3) The Participant shall obtain patent agreements to effectuate the provisions of this clause from all persons in its employ who perform any part of the work under the Cooperative Agreement except nontechnical personnel, such as clerical employees and manual laborers.
- (4) The Participant agrees that the Government may duplicate and disclose Subject Invention disclosures and all other reports and papers furnished or required to be furnished pursuant to this clause. If the Participant is to file a foreign patent application on a Subject Invention, the Government agrees, upon written request, to use its best efforts to withhold public disclosure of such invention disclosures until the expiration of the time period specified in Subparagraph (d)(1) of this clause, but in no event shall the Government or its employees be liable for any publication thereof.
- (f) Publication

It is recognized that during the course of the work under this Cooperative Agreement, the Participant or its employees may from time to time desire to release or publish information regarding scientific or technical developments conceived or first actually reduced to practice in the course of or under this Cooperative Agreement. In order that public disclosure of such information will not adversely affect the patent interests of DOE or the Participant, patent approval for release or publication shall be secured from Patent Counsel prior to any such release or publication.
- (g) Forfeiture of Rights in Unreported Subject Inventions
  - (1) The Participant shall forfeit to the Government, at the request of the Secretary or his designee, all rights in any Subject Invention which the Participant fails to report to the Patent Counsel (with notification by Patent Counsel to the Contracting Officer) within 6 months after the time the Participant:
    - (i) Files or causes to be filed a United States or foreign patent application thereon; or
    - (ii) Submits the final report required by Subparagraph (e)(2)(iii) of this clause, whichever is later.

(2) However, the Participant shall not forfeit rights in a Subject Invention if, within the time specified in (1)(i) or (1)(ii) of this Paragraph (g), the Participant:

- (i) Prepares a written decision based upon a review of the record that the invention was neither conceived nor first actually reduced to practice in the course of or under the Cooperative Agreement and delivers the same to Patent Counsel (with notification by Patent Counsel to the Contracting Officer); or
- (ii) Contending that the invention is not a Subject Invention, the Participant nevertheless discloses the invention and all facts pertinent to this contention to the Patent Counsel (with notification by Patent Counsel to the Contracting Officer); or
- (iii) Establishes that the failure to disclose did not result from the Participant's fault or negligence.

(3) Pending written assignment of the patent application and patents on a Subject Invention determined by the Secretary or his designee to be forfeited (such determination to be a final decision under the Disputes clause of this Cooperative Agreement), the Participant shall be deemed to hold the invention and the patent applications and patents pertaining thereto in trust for the Government. The forfeiture provision of this Paragraph (g) shall be in addition to and shall not supersede other rights and remedies which the Government may have with respect to Subject Inventions.

(h) Examination of Records Relating to Inventions

- (1) The Contracting Officer or his authorized representative, until the expiration of 3 years after final payment under this Cooperative Agreement, shall have the right to examine any books (including laboratory notebooks), records, documents, and other supporting data of the Participant which the Contracting Officer or his authorized representative reasonably deems pertinent to the discovery or identification of Subject Inventions or to determine compliance with the requirements of this clause.
- (2) The Contracting Officer or his authorized representative shall have the right to examine all books (including laboratory notebooks), records, and documents of the Participant relating to the conception or first actual reduction to practice of inventions in the same field of technology as the work under this Cooperative Agreement to determine whether any such inventions are Subject Inventions, if the Participant refuses or fails to:

- (i) Establish the procedures of Subparagraph (e)(1) of this clause; or
- (ii) Maintain and follow such procedures; or
- (iii) Correct or eliminate any material deficiency in the procedures within 30 days after the Contracting Officer notifies the Participant of such a deficiency.

(i) Withholding of Payment (Not Applicable to Subcontracts)

- (1) Any time before final payment of the amount of this Cooperative Agreement, the Contracting Officer may, if he deems such action warranted, withhold payment until a reserve not exceeding \$50,000 or 5 percent of the amount of this Cooperative Agreement, whichever is less, shall have been set aside if in his opinion the Participant fails to:
  - (i) Establish, maintain, and follow effective procedures for identifying and disclosing Subject Inventions pursuant to Subparagraph (e)(1) of this clause; or
  - (ii) Disclose any Subject Invention pursuant to Subparagraph (e)(2)(i) of this clause; or
  - (iii) Deliver the interim reports pursuant to Subparagraph (e)(2)(ii) of this clause; or
  - (iv) Provide the information regarding subcontracts pursuant to Subparagraph (j)(5) of this clause; or
  - (v) Convey to the Government, using a DOE-approved form, the title and/or rights of the Government in each Subject Invention as required by this clause.
- (2) The reserve or balance shall be withheld until the Contracting Officer has determined that the Participant has rectified whatever deficiencies exist and has delivered all reports, disclosures, and other information required by this clause.
- (3) Final payment under this Cooperative Agreement shall not be made by the Contracting Officer before the Participant delivers to Patent Counsel all disclosures of Subject Inventions and other information required by Subparagraph (e)(2)(i) of this clause, the final report required by Subparagraph (e)(2)(iii) of this clause, and Patent Counsel has issued a patent clearance certification to the Contracting Officer.

- (4) The Contracting Officer may, in his discretion, decrease or increase the sums withheld up to the maximum authorized above. No amount shall be withheld under this paragraph while the amount specified by this paragraph is being withheld under other provisions of the Cooperative Agreement. The withholding of any amount or subsequent payment thereof shall not be construed as a waiver of any rights accruing to the Government under this contract.

(j) Subcontracts

- (1) The Participant will include the clause at 37 C.F.R. § 401.14(a) (Small Business Firms or Nonprofit Organizations) suitably modified to identify the parties, in all subcontracts, regardless of tier, for experimental, developmental, or research work to be performed in the United States by a small business firm or a nonprofit organization. In all other subcontracts, regardless of tier for experimental, developmental, demonstration, or research work, the Participant will include a Patent Rights clause as approved by the Contracting Officer.
- (2) Except as may be otherwise provided in this clause, the Participant shall not, in any subcontract by using a subcontract as consideration therefor, acquire any rights in its subcontractor's subject invention for the Participant's own use (as distinguished from such rights as may be required solely to fulfill the Participant's contract obligations to the Government in the performance of this contract).
- (3) All invention disclosures, reports, instruments, and other information required to be furnished by the subcontractor to DOE, under the provisions of a Patent Rights clause in any subcontract hereunder may, in the discretion of the Contracting Officer, be furnished to the Participant for transmission to DOE.
- (4) The Participant shall promptly notify the Contracting Officer in writing upon the award of any subcontract containing a Patent Rights clause by identifying the subcontractor, the work to be performed under the subcontract, and the dates of award and estimated completion. Upon the request of the Contracting Officer, the Participant shall furnish a copy of the subcontract.
- (5) The Participant shall identify all subject inventions of the subcontractor of which it acquires knowledge in the performance of this Cooperative Agreement and shall notify the Patent Counsel (with notification by Patent Counsel to the Contracting Officer) promptly upon the identification of the inventions.

- (6) It is understood that the Government is a third party beneficiary of any subcontract clause granting rights to the Government in subject inventions, and the Participant hereby assigns to the Government all rights that the Participant would have to enforce the subcontractor's obligations for the benefit of the Government with respect to subject inventions. The Participant shall not be obligated to enforce the agreements of any subcontractor hereunder relating to the obligations of the subcontractor to the Government regarding subject inventions.

(k) Background Patents

- (1) "Background Patent" means a domestic patent covering an invention or discovery which is not a subject invention and which is owned or controlled by the Participant at any time through the completion of this Cooperative Agreement:
- (i) Which the Participant, but not the Government, has the right to license to others without obligation to pay royalties thereon, and
  - (ii) Infringement of which cannot reasonably be avoided upon the practice of any specific process, method, machine, manufacture, or composition of matter (including relatively minor modifications thereof) which is a subject of the research, development, or demonstration work performed under this contract.
- (2) The Participant agrees to and does hereby grant to the Government a royalty-free, nonexclusive license under any Background Patent for purposes of practicing a subject of this contract by or for the Government in research, development, and demonstration work only.
- (3) The Participant also agrees that upon written application by DOE it will grant to responsible parties, for purposes of practicing a subject of this contract, nonexclusive licenses under any Background Patent on terms that are reasonable under the circumstances. If, however, the participant believes that exclusive or partially exclusive rights are necessary to achieve expeditious commercial development or utilization, then a request may be made to DOE for DOE approval of such licensing by the Participant.
- (4) Notwithstanding the foregoing paragraph (k)(3), the contractor shall not be obligated to license any background patent if the contractor demonstrates to the satisfaction of the Head of the Agency or designee that the contractor or its licensees are supplying the subject matter covered by said background patent in sufficient quantity and at reasonable prices to satisfy market needs, or have taken effective steps to so supply the subject matter.

(l) (Reserved)

(m) Limitation of Rights

Nothing contained in this Patent Rights article shall be deemed to give the Government any rights with respect to any invention other than a Subject Invention except as set forth in the Patent Rights clause of this Cooperative Agreement with respect to Background Patents and the Facilities License.

(n) Facility Patent License

The Contractor agrees to and does hereby grant to the Government or others acting on its behalf, an irrevocable non-exclusive paid-up license in and to any invention of discovery of the Contractor which is incorporated or embodied in the design or construction or utilized in the operation of the Facility or which covers articles, materials or products manufactured at the Facility (1) to practice or have practiced by or for the Government at the Facility, and (2) to transfer such license with the transfer of that Facility. Further, the Contractor agrees to obtain an equivalent license from its subcontractors and licensors, if any.

9. RIGHTS IN TECHNICAL DATA (Long Form) (48 C.F.R. § 952.227-75)

(a) Definitions.

(1) "Technical data" means recorded information, regardless of form or characteristic, of a scientific or technical nature. It may, for example, document research, experimental, developmental, or demonstration, or engineering work, or be usable or used to define a design or process, or to procure, produce, support, maintain, or operate material. The data may be graphic or pictorial delineations in media such as drawings or photographs, text in specifications or related performance or design type documents or computer software (including computer programs, computer software data bases, and computer software documentation).

Examples of technical data include research and engineering data, engineering drawings and associated lists, specifications, standards, process sheets, manuals, technical reports, catalog item identification, and related information. Technical data as used herein do not include financial reports, cost analyses, and other information incidental to Cooperative Agreement administration.

(2) "Proprietary data" means technical data which embody trade secrets developed at private expense, such as design procedures or techniques, chemical composition of materials, or manufacturing methods, processes, or treatments, including minor modifications thereof, provided that such data:

- (i) Are not generally known or available from other sources without obligation concerning their confidentiality;
  - (ii) Have not been made available by the owner to others without obligation concerning their confidentiality; and
  - (iii) Are not already available to the Government without obligation concerning their confidentiality.
- (3) "Contract data" means technical data first produced in the performance of this Cooperative Agreement, technical data which are specified to be delivered under this Cooperative Agreement, technical data that may be called for under the Additional Technical Data Requirements clause of this Cooperative Agreement, if any, or technical data actually delivered in connection with this Cooperative Agreement.
- (4) "Unlimited rights" means rights to use, duplicate, or disclose technical data, in whole or in part, in any manner and for any purpose whatsoever, and to permit others to do so.
- (5) "Government" means the Government of the United States of America.
- (6) "Cooperative Agreement" means this Cooperative Agreement No. \_\_\_\_\_ between \_\_\_\_\_ and the Department of Energy.
- (7) "Know-how" means unpatented technical information, assistance, training or expertise including drawings, designs, specifications, blueprints, or manuals owned or controlled by the Participant.
- (8) "Facility" means the \_\_\_\_\_ facility that is to be designed, constructed, and operated as part of this Cooperative Agreement.
- (9) "Participant" means \_\_\_\_\_, signatory to this Cooperative Agreement.
- (10) "Protected Clean Coal Technology Data" means technical data or commercial or financial data first produced in the performance of this Agreement which, if it had been obtained from and first produced by a Non-Federal party, would be a trade secret or commercial or financial information that is privileged or confidential under the meaning of 5 U.S.C. 552(b)(4), and which is marked as being Protected Clean Coal Technology Data by a Party to this Agreement.

(b) Allocation of rights.



(1) The Government shall have:

- (i) Unlimited rights in contract data except as otherwise provided below with respect to proprietary data or Protected Clean Coal Technology Data;
- (ii) The right to remove, cancel, correct, or ignore any marking not authorized by the terms of this Cooperative Agreement on any technical data furnished hereunder, if in response to a written inquiry by DOE concerning the propriety of the markings, the Participant fails to respond thereto within 60 days or fails to substantiate the propriety of the markings. In either case, DOE will notify the Participant of the action taken;
- (iii) No rights under this Cooperative Agreement in any technical data which are not Contract Data.

(2) The Participant shall have:

- (i) The right to withhold proprietary data in accordance with the provisions of this clause; and
- (ii) The right to use for its private purposes, subject to patent, security, or other provisions of this Cooperative Agreement, Contract Data it first produces in the performance of this Cooperative Agreement, provided the data requirements of this Cooperative Agreement have been met as of the date of the private use of such data. The Participant agrees that to the extent it receives or is given access to proprietary data or other technical, business, or financial data in the form of recorded information from DOE or a DOE Contractor or subcontractor, the Participant shall treat such data in accordance with any restrictive legend contained thereon unless use is specifically authorized by prior written approval of the Contracting Officer; and
- (iii) The right to mark, with DOE's concurrence, as Protected Clean Coal Technology Data, any data first produced in the performance of this Agreement by its employees, in accordance with paragraph (i) of this clause.

(3) Nothing contained in this Rights of Technical Data clause shall imply a license to the Government under any patent or be construed as affecting the scope of any licenses or other rights otherwise granted to the Government under any Patent.

(c) Copyrighted material.

- (1) The Participant shall not, without prior written authorization of the Patent Counsel, establish a claim to statutory copyright in any contract data first produced in the performance of this Cooperative Agreement. To the extent such authorization is granted, the Government reserves for itself and others acting on its behalf a royalty-free, nonexclusive, irrevocable, world-wide license for Governmental purposes to publish, distribute, translate, duplicate, exhibit, and perform any such data copyrighted by the Participant.
  - (2) The Participant agrees not to include in the technical data delivered under this Cooperative Agreement any material copyrighted by the Participant and not to knowingly include any material copyrighted by others, without first granting or obtaining at no cost a license therein for the benefit of the Government of the same scope as set forth in Paragraph (c)(1) above. If such royalty-free license is unavailable and the Participant nevertheless determines that such copyrighted material must be included in the technical data to be delivered, rather than merely incorporated therein by reference, the Participant shall obtain the written authorization of the Contracting Officer to include such copyrighted material in the technical data prior to its delivery.
  - (3) The Participant agrees that upon written application by the DOE it will grant to the extent practicable a non-exclusive license to responsible third parties in any copyrighted work that is utilized, tested or embodied by the Participant in the performance of work under this Cooperative Agreement or subcontract to practice the \_\_\_\_\_ system which is the subject of this Cooperative Agreement on terms and conditions which are reasonable under the circumstances.
- (d) Subcontracting. It is the responsibility of the Participant to obtain from its contractors and subcontractors technical data and rights therein, on behalf of the Government, necessary to fulfill the Participant's obligations to the Government with respect to such data. In the event of refusal by a subcontractor to accept a clause affording the Government such rights, the Participant shall:
- (1) Promptly submit written notice to the Contracting Officer of the Cooperative Agreement setting forth reasons for the subcontractor refusal and other pertinent information which may expedite disposition of the matter; and
  - (2) Not proceed with the subcontract without the written authorization of the Contracting Officer.
  - (3) As used in this Rights in Technical Data clause, the term Contractor or Subcontractor includes any person or entity responsible for fulfilling the Participant's obligations to the Government with respect to technical data.

- (e) Withholding of proprietary data. Notwithstanding the inclusion of the additional Technical Data Requirements Clause in this Cooperative Agreement or any provision of this Cooperative Agreement specifying the delivery of technical data, the Participant may withhold proprietary data from delivery, provided that the Participant furnishes in lieu of any such proprietary data so withheld technical data disclosing the source, size, configuration, mating and attachment characteristics, functional characteristics, and performance requirements ("Form, Fit, and Function" data, e.g., specification control drawings, catalog sheets, envelope drawings, etc.), or a general description of such proprietary data where "Form, Fit, and Function" data are not applicable. The Government shall acquire no rights to any proprietary data so withheld except that such data shall be subject to the "Inspection rights" provisions of Paragraph (f), the "Limited rights in proprietary data" provisions of Paragraph (g), and, if included, the "Participant licensing" provisions of Paragraph (h), the "Availability of contract and other data" provisions of Paragraph (i), the "Commercialization of \_\_\_\_\_ technology" provisions of Paragraph (j).
- (f) Inspection rights. Except as may be otherwise specified in this Cooperative Agreement for specific items of proprietary data, which are not subject to this paragraph, the Contracting Officer's representatives, at all reasonable times up to 3 years after final payment under this Cooperative Agreement, may inspect at the participants facility any proprietary data withheld under Paragraph (e) for the purpose of verifying that such data properly fell within the withholding provisions of Paragraph (e) or for evaluating work performance.
- (g) Limited rights in proprietary data. Except as may be otherwise specified in this Cooperative Agreement as technical data which are not subject to this paragraph, the Participant shall, upon written request from the Contracting Officer at any time prior to 3 years after final payment under this Cooperative Agreement, promptly deliver to the Government any "proprietary data" withheld pursuant to Paragraph (e) of the Rights in Technical Data clause of this Cooperative Agreement. The following legend and no other is authorized to be affixed on any "proprietary data" delivered pursuant to this provision, provided the "proprietary data" meets the conditions for initial withholding under Paragraph (e) of the Rights in Technical Data clause. The Government will thereafter treat the "proprietary data" in accordance with such legend.

### LIMITED RIGHTS LEGEND

This "proprietary data" furnished under Cooperative Agreement \_\_\_\_\_ with the United States Department of Energy may be duplicated and used by the Government with the express limitations that the "proprietary data" may not be disclosed outside the Government or be used for purposes of manufacture without prior permission of the Participant, except that further disclosure or use may be made solely for the following purposes:

- (1) This "proprietary data" may be disclosed for evaluation purposes under the restriction that the "proprietary data" be retained in confidence and not be further disclosed;
- (2) This "proprietary data" may be disclosed to other contractors participating in the Government's program of which this Cooperative Agreement is a part, for information or use in connection with the work performed under these contracts and under the restriction that the "proprietary data" be retained in confidence and not be further disclosed; or
- (3) This "proprietary data" may be used by the Government or others on its behalf for emergency repair or overhaul work at the Facility under the restriction that the "proprietary data" be retained in confidence and not be further disclosed.

This legend shall be marked on any reproduction of this data in whole or in part.

- (h) Participant licensing. Except as may be otherwise specified in this Agreement as technical data not subject to this paragraph, the Participant agrees that upon written application by DOE, it will grant to the Government and responsible third parties a nonexclusive license in any contract data which are proprietary data, and it will grant to responsible third parties a nonexclusive license in any contract data which are Protected Clean Coal Technology Data, for purposes of practicing a subject of this Agreement, on terms and conditions reasonable under the circumstances including appropriate provisions for confidentiality; provided, however, the Participant shall not be obligated to license any such data if the Participant demonstrates to the satisfaction of the Head of the Agency or designee that:

- (1) Such data are not essential to the manufacture or practice of hardware designed or fabricated, or processes developed, under this Agreement;

- (2) Such data, in the form of results obtained by their use, are being supplied by the contractor or its licensees in sufficient quantity and at reasonable prices to satisfy market needs, or the contractor or its licensees have taken effective steps or within a reasonable time are expected to take effective steps to so supply such data in the form of results obtained by their use;

(i) Availability of contract and other data.

- (1) The Participant will, for the entire period of Participant's participation in the project at the Facility (including operation of the Facility) and for three years thereafter, whether or not under a Government Cooperative Agreement, keep and maintain all technical data, including proprietary data and data obtained from subcontractors and licensors, necessary to construct and/or operate the Facility, and all data including business and financial data necessary to evaluate the technical and economic operation of the Facility. During the entire period of construction and/or operation of the Facility, regardless of whether the Government participates past Phase I, the Participant shall permit the Government and its representative the right to inspect at the Facility any data kept and maintained pursuant to this paragraph. The Participant shall, after termination of the Government's participation in the project at the facility, periodically deliver reports to the Government on the construction and operation of the facility, which reports shall not include proprietary data.
- (2) If the Participant withdraws from this Cooperative Agreement or defaults after Phases I or II, the Government shall have the right to have all data kept and maintained pursuant to Paragraph (1) above, delivered to the Government or otherwise disposed of as the Contracting Officer shall direct upon such termination. Any proprietary data delivered pursuant to this paragraph shall be marked as provided in Paragraph (g) above with the addition to the legend thereof as follows: (4) This "proprietary data" may be used by Government or others on its behalf in confidence to the extent necessary to enable the Government to complete Phases II and/or III.
- (3) The Participant agrees to and does hereby grant to the Government or others acting on its behalf, an irrevocable non-exclusive paid-up license in and to any proprietary data of the Participant which are incorporated or embodied in the design or construction or utilized in the operation of the Facility: (1) to practice, or to have practiced, by or for the Government at the Facility, and (2) to transfer such license with the transfer of that Facility. Further, the Participant agrees to obtain an equivalent license from its contractors, subcontractors, and licensors, if any. The license granted pursuant to this subparagraph shall be for the limited purpose of

completion, repair or operation of the demonstration facility.

(j) Commercialization of \_\_\_\_\_ Technology.

- (1) In addition to or in assistance of any rights acquired by the Government in \_\_\_\_\_ Technology from the Participant under paragraph (k) of the Patents Clause and paragraph (h) of the Rights in Technical Data Clause, the Participant agrees to negotiate in good faith with a responsible applicant and to conclude an agreement with such applicant to provide a commercial-size facility incorporating \_\_\_\_\_ Technology in the United States equal to or a scaled-up or modified version of the \_\_\_\_\_ facility which is a subject of this Cooperative Agreement. The Agreement shall, as appropriate to the circumstances, include provisions for licensing patented and unpatented \_\_\_\_\_ Technology including background patents, waived subject inventions, proprietary data, know-how and copyrighted works including improvements or enhancements of any of the foregoing as well as provisions for technical assistance and training.
- (2) The services and/or licenses specified in (j)(1) of this paragraph shall be made available to responsible applicants to construct or have constructed, operate or have operated a facility incorporating \_\_\_\_\_ Technology in the United States under reasonable terms and conditions taking into consideration accepted licensing standards or norms in the relevant U.S. industry as well as accepted levels of return on investment for such activities and/or services.
- (3) In the event that the Participant and the applicant cannot reach agreement after one year from the start of diligent and responsible negotiations between them, then the DOE by its Secretary or designee, reserves the option to submit, with the approval of the said applicant, unresolved licensing issues to arbitration in New York under the rules of the American Arbitration Association. The Participant agrees to be bound by the results of the Arbitration.
- (4) The provisions of subparagraphs (1), (2), and (3) of this paragraph (j) shall not apply as long as the Participant or its licensees are supplying U.S. market needs at reasonable prices for \_\_\_\_\_ systems.
- (5) The Participant agrees to obtain sufficient rights to meet its commitments to commercialize and/or license \_\_\_\_\_ Technology.
- (6) The Participant agrees that neither it nor any assignee will grant to any person the exclusive right to use or sell \_\_\_\_\_ technology in the United States unless such person agrees that any embodiment of \_\_\_\_\_ technology will

be manufactured substantially in the United States. However, in individual cases, the requirement for such an agreement may be waived by DOE upon a showing by the Participant or its assignee that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States or that under the circumstances domestic manufacture is not commercially feasible.

- (7) For the purposes of this section, technology is... (Define the equipment to be provided with the sale of the technology or necessary to achieve the performance under the license of the technology; this may include equipment in addition to that which is included in the Demonstration Project).
- (k) [Reserved.] (It is expected that this paragraph will include provisions that certain types of specified, mutually agreed upon data will be available to the public and will not be asserted by the Participant as proprietary or Protected Clean Coal Technology data.)
- (l) Protected Clean Coal Technology Data.
  - (1). Notwithstanding any other provisions of this Rights in Technical Data clause, the Participant may, with concurrence of DOE, (i) claim and mark as Protected Clean Coal Technology Data any data first produced in the performance of this Agreement by its employees, and (ii) so claim and mark, following mutual agreement of the other party, any data first produced in the performance of this Agreement by the other party's employees.
  - (2) Any such claimed Protected Clean Coal Technology Data will be clearly marked as "Protected Clean Coal Technology Data", will be treated as such, and, except as otherwise provided herein, will not be published, disseminated or disclosed to others outside the Government by the Government for a period, as approved by DOE, of [up to five (5) years after completion of the operations phase of this Agreement,]\* without the prior written authorization of the Participant. The marking shall include the following legend and such other restrictions or limitations on use or disclosure as may be applicable or appropriate.

\*Note: The period for protection of such data is fully negotiable, but cannot exceed five years after completion of the operations phase of the particular Agreement.

### PROTECTED CLEAN COAL TECHNOLOGY DATA

This Protected Clean Coal Technology Data was produced under a Cooperative Agreement identified as \_\_\_\_\_ under a DOE Clean Coal Technology Project and may not be published, disseminated or disclosed to others by the Government until [\_\_\_\_\_ years after completion of the operations phase of the above Cooperative Agreement,]\* unless express written authorization is obtained from \_\_\_\_\_ (the Participant). Upon expiration of the period of protection set forth in this legend, the Government shall have unlimited rights in this data. This legend shall be marked on any reproduction of this data, in whole or in part.

- (3) Any such marked Protected Clean Coal Technology Data may be disclosed under obligations of confidentiality for the following purposes:
  - (i) The Protected Clean Coal Technology Data may be disclosed to other parties and contractors performing work under the DOE Clean Coal Technology Project of which this Cooperative Agreement is a part, for information and use in performing work under the Project only.
  - (ii) The Protected Clean Coal Technology Data may be disclosed to and used by others if necessary for emergency repair or overhaul work at the Facility and to others working under the Project for purposes of evaluation.
- (4) Any such marked Protected Clean Coal Technology Data shall, upon the request of DOE, be made available to the other Participants in this DOE Clean Coal Technology Project, subject to the restrictions on disclosure, publication, and dissemination in the Legend, for use in performing work or monitoring progress under the Project and for their use in utilizing and commercializing the technology being developed under the Project.
- (5) The Participant shall have the right to license such Protected Clean Coal Technology Data or include such Protected Clean Coal Technology Data in a license with other technology developed under this Clean Coal Technology Project and, in accordance with paragraph (h) of this clause, agrees to license such Protected Clean Coal Technology Data to responsible third parties. Such licenses shall include terms and conditions that are reasonable under the circumstances, including obligations of confidentiality.

\*See note on page 33.



- (6) The obligations of confidentiality and restrictions on publication and dissemination shall end for any Protected Clean Coal Technology Data:
- (i) At the end of the protected period, as indicated in the Legend, i.e. [\_\_\_\_ years after completion of the operations phase of this Cooperative Agreement;]\*
  - (ii) If the data becomes publicly known or available from other sources without a breach of the obligations of confidentiality with respect to the Protected Clean Coal Technology Data;
  - (iii) If the same data is independently developed by someone who did not have access to the Protected Clean Coal Technology Data and such independently developed data is made available without obligations of confidentiality;
  - (iv) \_\_\_\_ years, as agreed to by DOE, after a determination not to enter into the operations phase of this Agreement, or after the operations phase is terminated prior to completion; or
  - (v) If the Participant disseminates or authorizes another to disseminate such data without obligations of confidentiality.

\*See note on page 33.

ATTACHMENT C

FEDERAL ASSISTANCE REPORTING CHECKLIST

The Participant shall prepare and submit (postage prepaid) the plans and reports indicated in this Attachment. The Participant shall be responsible for levying appropriate reporting requirements on any contractor or subcontractor in such a manner as to ensure that data submitted by the contractor or subcontractor to the Participant is compatible with the data elements that the Participant is responsible for submitting to DOE.

[The Government requires timely reporting of technical, cost, and schedule status during project performance, as well as documentation of the technical, economic, and environmental performance data that result from the project. It is the intention, whenever possible, to utilize the Participant's project status reporting system to the extent it provides the information identified in this Attachment. The requirement for the reports listed, their contents, and their frequency of submission are to be negotiated, but must be commensurate with the scope and complexity of the proposed project. Attachment C of this Model Cooperative Agreement presents the anticipated reporting effort for a typical project. If the Participant's project control and reporting system cannot satisfy the Government's requirements, then the appropriate forms embodied in the Uniform Reporting System for Federal Assistance (Grants and Cooperative Agreements) will be incorporated into the Cooperative Agreement.]

**U.S. DEPARTMENT OF ENERGY  
FEDERAL ASSISTANCE REPORTING CHECKLIST**

FORM EIA-488A  
(10/80)

FORM APPROVED  
OMB NO 1900-0127

1. Identification Number:	2. Program/Project Title:		
3. Recipient:			
<b>4. Reporting Requirements:</b>  <b>PROGRAM/PROJECT MANAGEMENT REPORTING</b> <input checked="" type="checkbox"/> Federal Assistance Milestone Plan <input checked="" type="checkbox"/> Federal Assistance Budget Information Form <input checked="" type="checkbox"/> Federal Assistance Management Summary Report <input checked="" type="checkbox"/> Federal Assistance Program/Project Status Report <input checked="" type="checkbox"/> Financial Status Report, OMB Form 269  <b>TECHNICAL INFORMATION REPORTING</b> <input type="checkbox"/> Notice of Energy RD&D <input checked="" type="checkbox"/> Technical Progress Report <input checked="" type="checkbox"/> Topical Report <input checked="" type="checkbox"/> Final Technical Report	<b>Frequency</b>	<b>No. of Copies</b>	<b>Addressees</b>
	O, Q	1, 3	A, B
	O, X	1, 3	A, B
	O, Q	1, 4	A, B
	M	1, 3	A, B
	M	1, 3	A, B
	Q	1, 4	A, B
	A	1, 4	A, B
	F	1, 5	A, B

**FREQUENCY CODES AND DUE DATES:**

A - As Necessary; within 5 calendar days after events.

F - Final; 90 calendar days after the performance of the effort ends.

Q - Quarterly; within 30 days after end of calendar quarter or portion thereof.

O - One time after project starts; within 30 days after award.

X - Required with proposals or with the application or with significant planning changes.

Y - Yearly; 30 days after the end of program year. (Financial Status Reports 90 days).

S - Semiannually; within 30 days after end of program fiscal half year.

**5. Special Instructions:**

The Special Instructions are attached to this checklist

In addition to the reports identified above, the deliverables identified in Sections 6.0 and 7.0 of the Special Instructions are required.

6. Prepared by: (Signature and Date)	7. Reviewed by: (Signature and Date)
--------------------------------------	--------------------------------------

## FEDERAL ASSISTANCE REPORTING CHECKLIST

### PURPOSE

This form serves to identify plans and reports selected by DOE as reporting requirements for the Federal Assistance Program/Project.

### INSTRUCTIONS

- Item 1 — Enter the program /project identification number as it appears in the official award.
  - Item 2 — Enter the program/project description as it appears in the official award.
  - Item 3 — Enter the name of the recipient.
  - Item 4 — Check spaces to indicate plans and reports selected. For each report checked, indicate frequency of delivery in column provided using one of the frequency of delivery codes as shown, as well as the number of copies requested and to whom they should be sent.
    - Federal Assistance Milestone Plan — presents, with the accompanying Milestone Log, a schedule of the planned activity.
    - Federal Assistance Budget Information Form — presents the planned costs.
    - Federal Assistance Management Summary Report — registers planned progress and costs to actual progress and costs in a capsulized format.
    - Federal Assistance Program/Project Status Report — periodically reports project status, explains variances and problems, and discusses any other areas of concern or achievements.
    - Financial Status Report, OMB Form 269 — presents the status of funds committed to the project.
    - Notice of energy R&D Project — provides information on unclassified DOE R&D Project for dissemination to the scientific, technical, and industrial communities and to the public. Also provides information to the Smithsonian Information Exchange and to the DOE Technical Information Center.
    - Technical Progress Report — periodically reports progress and/or results of DOE supported R&D and scientific projects covering a specific reporting period.
    - Topical Report — presents the technical results of work performed on a specific phase of a project.
    - Final Technical Report — presents a technical accounting of the total work performed on a project.
- Frequency Codes - Each code represents a specific reporting frequency (such as Quarterly). These time periods are suggested in the program announcement and negotiated at the time of the award.
- Item 5 — Identify any special reporting requirements or instructions not identified in Item 4. (Use additional sheets as necessary.).
  - Item 6 — Signature of person preparing the checklist and the date prepared. Preparation is by person responsible for program solicitation.
  - Item 7 — Signature of the person reviewing the checklist and date reviewed.

## DISTRIBUTION

**Note:** DOE will provide the addresses to which the reports specified in the this attachment will be sent. There may be up to 12 addresses.

- Example:**
- A. Contracting Officer's Representative**  
Energy Technology Center  
City, State
  - B. Reports Receipt Coordinator**  
Energy Technology Center  
City, State
  - C. U.S. Department of Energy**  
Office of Patent Counsel  
City, State

SPECIAL INSTRUCTIONS  
FEDERAL ASSISTANCE REPORTING CHECKLIST

1.0 Project Management Reporting

Project management reporting shall be by Work Breakdown Structure (WBS) or a suitable alternative to logically and systematically define project activities for the tracking of technical, cost and schedule progress. If a WBS system is used, then the structure should be as follows:

- Level 1 -- Project
- Level 2 -- Phase (i.e., design, construction, operation)
- Level 3 -- Tasks (as defined in the Statement of Work)

If an alternate system is used, then the reporting should be detailed at least to a level comparable to WBS Level 3.

2.0 Baseline Plans

Discrete, measurable units of the proposed work are to be presented in the Baseline Plans. These plans will provide a specific outline of what the Participant intends to do, how it is intended to be accomplished, and the time and cost involved. These plans will be developed and submitted to serve as the standard against which status and progress can be measured during the performance period. The following descriptions of baseline planning forms normally used by DOE for financial assistance agreements define the type and detail of information required.

2.1 Federal Assistance Management Summary Report (Form EIA-459E).

This report is a single page form which is used to present projected cost and activity data. The cost data to be entered must depict projected total costs for the life of the project on at least a quarterly basis. The activity data required are a delineation of the project's major milestones and a bar chart displaying the projected schedule for attainment of these milestones. This form may be used for both the baseline plan and for project status reporting.

2.2 Federal Assistance Milestone Plan (Form EIA-459B).

The milestone plan is used to portray the major milestones of the project in bar chart format. The purpose of the plan is to establish the Participant's time schedule for accomplishing planned events and milestones. It covers the life of the project and is to be organized by major project activities. It should be detailed to a level equivalent to WBS Level 3. Intermediate events and critical milestones are further identified in an attached "milestone log" and include the identification number, descriptive name of the event or milestone, and the scheduled date of completion.

### 2.3 Federal Assistance Budget Information Form (Form EIA-459C).

This form is used to provide summary level data on the proposed total project budget. The total project budget is broken down into Federal and non-Federal funds for each major activity and shall include a separate breakdown of the total budget for each WBS Level 3 (or equivalent) activity by object class of expenditure (i.e., personnel, travel, etc.).

### 3.0 Status Reports

Status Reports shall provide the performance information required to determine program effectiveness and the information which DOE requires to maintain accountability for public funds. The reports must show actual costs, schedule progress, and total project status to date. When the status reports are compared with the baseline plans, accomplishments can be noted, problems become apparent, and corrective action can be taken. The following descriptions of status report forms normally used by DOE for financial assistance agreements define the type and detail of information required.

#### 3.1 Federal Assistance Management Summary Report (Form EIA-459E).

This report is a single page form on which the Participant provides summary cumulative cost and activity data for each reporting period.

#### 3.2 Federal Assistance Program/Project Status Report (Form EIA-459F).

This is a short report where the Participant provides a brief narrative discussion of the following topics: project status, significant accomplishments, cumulative cost summary (planned vs. actual), problems/issues, and plans for next month. The report should also include capital and operating cost information for work performed during a specific reporting period. Equipment and facilities costs should be itemized, and any associated sales taxes, freight charges, and fabrication/installation costs should be given and itemized separately from the associated equipment and facilities costs in the same format as proposed costs given in Exhibit C.1, Appendix K, Major Equipment Cost List, of the PON. Actual operating costs should be provided in the same format as proposed costs given in Exhibit G, Appendix K, Summary of Operating and Startup Costs, of the PON. Fixed operating and maintenance costs should include operating manpower requirements and labor costs, maintenance labor and material costs, and administrative and support labor costs. Variable operating costs should be itemized separately for commodities such as fuels, sorbents, chemicals, water, auxiliary power, and waste effluents. Startup costs should also be given.



effective date of the termination. If any claim, litigation, negotiation, investigation, audit, or other action involving the records starts before the expiration of the three-year retention period, the Participant shall retain the records until such action is completed and all related issues are resolved, or until the end of the three-year retention period, whichever is later.

(B) Authorized Copies

Copies made by microfilm, photocopying, or similar methods may be substituted for original records. Records originally created by computer may be retained on an electronic medium, provided such medium is "read only" or is protected in such a manner that the electronic record can be authenticated as an original record.

(C) Access to Records

DOE and the Comptroller General of the United States, or any of their authorized representatives, shall have the right of access to any books, documents, papers, or other records (including those on electronic media) which are pertinent to this Cooperative Agreement. The purpose of such access is limited to the making of audits, examinations, excerpts, and transcripts. The right of access described in this paragraph shall last as long as the Participant retains records which are pertinent to this Cooperative Agreement.

(D) Restrictions on Public Disclosure

The Federal Freedom of Information Act (5 U.S.C. § 552) does not apply to records the Participant is required to retain by the terms of this Cooperative Agreement to the extent that the records are not also in the possession of the Government. Unless otherwise required by law or a court of competent jurisdiction, the Participant shall not be required to disclose such records to the public.

ARTICLE XXIII. PUBLIC INFORMATION RELEASE

The Participant shall coordinate in advance with the DOE Contracting Officer or the COR on all information to be issued by the Participant to the public

### 3.3 Financial Status Report (Standard Form 269).

This form is used to provide DOE with regular periodic accounting of project funds expended. The accounting may be on either a cash or accrual basis. Actual total expenditures and obligations incurred, but not paid, are reported for each reporting period for each major activity. They should correlate with those WBS Level 3 (or equivalent) activities identified on the "Federal Assistance Milestone Plan." Provision must be made to identify the Federal and non-Federal share of project outlays for each identified activity. This report must also include an updated estimate of total anticipated costs for the subsequent reporting period and for completion of the project.

### 4.0 Submission of Reports and Other Documents for DOE Review

The Participant shall submit to DOE for review and approval all deliverables defined in Sections 5.0, 6.0 and 7.0 of this Attachment unless specifically exempted. This review and approval shall occur prior to any submission for publication, announcement, or presentation.

Unless otherwise stated, all such scientific and technical report deliverables required by the Cooperative Agreement will be submitted to the COR in draft form. DOE will review the draft and provide comments within 30 days of receipt from the Participant. The Participant will incorporate those comments mutually agreed to and will submit the report in final form within 30 days after receipt of DOE's comments.

All documents intended for publication, announcement, or presentation require prior clearance by DOE Patent Counsel. However, journal articles, conference papers and proceedings, etc., usually must be cleared by Patent Counsel in a relatively short period of time. Therefore, the Participant shall make direct distribution to the COR and to DOE Patent Counsel.

All final copies of documents designated by the COR for publication and/or announcement shall be prepared in accordance with the instructions entitled "Guidelines for Preparation of Reproducible Master (Camera-Ready) Copy of Reports" which will be furnished at a later date.

The Participant should recognize that full and comprehensive compliance of its reporting requirements under this Cooperative Agreement may involve disclosure of proprietary data to the Government for the exercise of the Government's rights in accordance with the Rights in Technical Data clause. Recognizing that the Government intends to publish, in whole, certain required reports and other information about the project which is the subject of this Cooperative Agreement while preserving the proprietary data of the Participant, the Participant shall submit all

deliverables as stand-alone documents which do not contain proprietary data. Whenever, in any deliverable, proprietary data are needed for fullness of reporting, they shall be included in a proprietary appendix.

It is the intention of DOE to publish the following reports:

- ◆ Annual Technical Progress Reports.
- ◆ Topical Reports.
- ◆ Final Technical Report.
- ◆ Public Design Reports.
- ◆ Economic Evaluation Report.

## 5.0 Technical Information Reports

This information is that knowledge or information (unlimited, limited, and classified) resulting from, or pertaining to, the conduct of research and development efforts. This information reports on progress or results of DOE-funded demonstration activities and usually is published as technical reports, journal articles, reprints, theses or dissertations, conference and symposium proceedings, or translations. This may include experimental data, theoretical data, analytical studies, and economic and energy use projections. This information is used by managers, scientists, researchers, and engineers engaged in scientific and technological efforts, and is the basic intellectual resource for and result of such effort. Types of technical reports are described as follows:

- 5.1 The Technical Progress Report will summarize the work performed during a specific reporting period and will include the technical and scientific results (both positive and negative) of that period. By mutual agreement, a Technical Progress Review Meeting may take the place of a formal Technical Progress Report. In such cases, a conference record (see paragraph 6.10) and copies of the presentation materials shall be delivered to DOE within 5 days following the Review Meeting and shall constitute the Technical Progress Report for that period. At least once each year, however, a Technical Progress Report describing the progress made during the previous 12 months shall be prepared for publication. The procedures discussed in Section 4.0 apply for any Technical Progress Report to be published.
- 5.2 Topical Reports, if required, will be defined in the Statement of Work (SOW). These reports usually provide a comprehensive statement of the technical results of the work performed for a specific task or subtask of the SOW, or detail significant new scientific or technical advances. If Topical Reports are to be prepared, DOE will first review the report outline and, once approved, subsequently review the draft report as discussed in Section 4.0.
- 5.3 The Final Technical Report is a technical account of the total work performed under the agreement. It is a comprehensive description of the results achieved and of the investigations undertaken and includes an analysis of the Participant's view and plan for marketing, commercialization, and technical readiness of the technology demonstrated. It must include tabulations of data, figures, photographs, and bibliographic citations in support of the investigations undertaken and conclusions reached. Where applicable, it summarizes all topical and technical progress reports. The Participant shall,

prior to preparation of the draft, provide to DOE the report outline. Subsequent to approval of the report outline, the Participant will deliver a draft copy of the final report 60 days before the completion of the period of performance. The Government shall be allowed 30 days to review the draft copy and to notify the Participant, in writing, of agreement or recommended changes. If the Government does not agree or recommend changes within 30 days of receipt of the draft copy, the report shall be deemed acceptable. A camera-ready copy of the approved final report is due upon conclusion of the operations phase or termination of the Cooperative Agreement, whichever occurs first.

In addition, at least the following deliverables are to be provided as components of the Final Technical Report:

#### 5.3.1 Critical Component Failure Report.

The data in this report will establish a basis for RAM analysis and confirm or modify assumptions that were made in the design phase of the project. Furthermore, these data will serve as a data base for future plants for establishing component and system reliability, availability, and maintainability. Typically, the following items should be reported for each unit/equipment failure:

- ◆ Failure identification.
- ◆ Description of failure.
- ◆ Disposition of failed item.
- ◆ Action taken.
- ◆ Remarks/recommendations/additional information.

Each piece of equipment should have a failure history report and a maintenance report.

#### 5.3.2 Reliability, Availability, Maintainability (RAM) Analysis Data.

These data will provide RAM characteristics obtained from actual plant operation. They should be consistent in form with the above Critical Component Failure Report to allow for easy and direct comparisons.

#### 5.3.3 Stream Data.

The Participant shall provide to the DOE a complete set of all nonproprietary stream data, including the measured flows, stream properties, and constituents at various operating conditions. These data represent the final status of the information reported in the Final Public Design Report.

#### 5.3.4 Equipment List.

The Equipment List consists of a summary of the major equipment for the plant. Equipment is to be sorted by Flow Diagram, equipment type, and equipment number. General description data are to be provided for each equipment item, including, but not limited to, the number required for operation, size or capacity, major nonproprietary operating and design parameters, materials costs and any associated sales taxes, freight and fabrication/installation costs itemized separately, associated bulk quantities, and manufacturer and/or vendor. These data represent the final status of the information reported in the Final Public Design Report.

#### 5.3.5 Drawings.

The Participant shall include a complete set of nonproprietary Process Flow Diagrams, Equipment Plot and Elevation Drawings, and Process and Instrumentation Diagrams which describe the plant configuration at the end of the demonstration period. These drawings represent the final status of the drawings presented in the Final Public Design Report.

#### 5.3.6 Plant Capital Cost Data.

The Participant shall include the data and documentation for all costs associated with the construction of the plant, with a breakdown which would permit this information to be used for projecting future plant construction costs. This breakdown should include the level of detail requested for capital costs as discussed in Section 3.2, Federal Assistance Program/Project Status Report.

#### 5.3.7 Plant Operating Cost Data.

The participant shall include the data and documentation for all costs associated with the operation of the plant under conditions that represent reliable plant performance. Actual costs should be provided in the same format as proposed costs given in Exhibit D, Appendix K, Summary of Operating and Startup Costs, of the PON. Fixed operating and maintenance costs should include operating manpower requirements and labor costs, maintenance labor and material costs, and administrative and support labor costs. Variable operating costs should be itemized separately for commodities such as fuels, sorbents, chemicals, water, auxiliary power, and waste effluents. Startup costs should be itemized. Also, material and energy balances should be provided for operating conditions that represent reliable performance.

## 6.0 Special Reports

In addition to the reports itemized on the Financial Assistance Reporting Requirements Checklist, the Participant shall also provide the deliverables listed in this section. Each deliverable title is followed by a set of symbols in parentheses which indicate delivery information consistent with the abbreviations used on the checklist. The format for the symbols in parentheses is (report frequency/number of copies/addressees) (See Page C-2).

### 6.1 Environmental Monitoring Plan (0/1,5/A,B).

See Appendix N of the Program Opportunity Notice for guidance in arriving at a mutually agreeable plan. A final approved plan must be delivered to DOE by a mutually agreed upon date.

### 6.2 Environmental Monitoring Reports (Q,Y, and A/1,5/A,B).

The results of sampling conducted under the Environmental Monitoring Plan (EMP) should be reported in quarterly and annual reports or, if appropriate, test-series reports. Test-series reports should be used if the facility is to be operated under various configurations or with different feedstocks over discrete periods or if a phased approach to monitoring is being used. All sampling results obtained under a given operating condition would then be contained in a single document. Contents of the test-series report should include:

- ◆ A summary of plant operations and sampling results.
- ◆ A description of any deviations from the EMP.
- ◆ Details of the sampling and analytical procedures.
- ◆ An analysis of performance of pollution control units.
- ◆ The results of all stream, ambient, and workplace sampling separated into compliance and supplemental monitoring.

Appendices should be included which contain the sampling and analytical data sheets and a Quality Assurance/Quality Control (QA/QC) program analysis.

During test series or phased operation, quarterly and annual reports will still be required. However, they should emphasize plant conditions and the types of sampling conducted during the reporting period rather than the results of the sampling. These reports should include:

- ◆ A description of project status.
- ◆ A summary of scheduled and completed sampling.
- ◆ A discussion of any regulatory compliance issues.
- ◆ A review of QA/QC activities during the period.
- ◆ Copies of compliance reports submitted to regulatory agencies during the period.

If the facility is not operated in a phased or test series mode, then only quarterly and annual reports are required. These reports should contain the information outlined above for the test series reports. A separate fourth quarter and annual report are not required. The fourth quarter data should be included in the annual report.

Quarterly reports are due within 60 days of the end of the calendar quarter. Annual reports are due within 90 days of the end of the calendar year. Test series reports are due within 90 days following completion of the test series. DOE review and approval of these reports are not required.

#### 6.3 Project Evaluation Plans (Each budget period except last/1,5/A,B).

Within 90 days after the beginning of each budget period except the last, the Participant will submit to the DOE for DOE approval a Project Evaluation Plan. This Plan will identify and describe the criteria by which the technical and economic feasibility of the project are to be measured. The Project Evaluation Plan as reviewed, revised, and approved by DOE will be used by the Participant for the preparation of a Project Evaluation Report to be submitted to DOE at least 60 days prior to the end of the budget period for which the Project Evaluation Plan was prepared. The approved Plan will be used by DOE as the basis for the DOE decision to continue the project to the subsequent budget period.

#### 6.4 Project Evaluation Reports (Each budget period except last/1,5/A,B).

Formal project reviews will be conducted during each budget period. Project Evaluation Reports will provide the basis for the decision to proceed to the next budget period. These reports should describe in detail the project status and explain any deviations from the project management plan, milestone schedule, and cost plan. These reports are to be submitted 60 days prior to the completion of each budget period except the last one.

#### 6.5 Public Design Reports (Phases 1 and 2/1,5/A,B).

The purpose of the Public Design Reports is to consolidate for public use all available nonproprietary design information on the project. Two separate reports are required. The first report is based on the preliminary design information and is due at the end of preliminary design. The second report is based on detailed design information and is due after completion of Phase 1, 60 days prior to completion of Phase 2. The second report should contain sufficient background information to provide an overview of the project and pertinent cost data. Since the scope of the reports is limited to nonproprietary information, their content will not be sufficient to provide a complete tool in designing a replicate plant. However, these reports will serve as a reference for the design considerations involved in a commercial-scale facility.

The reports should include an overview description of the technology and a summary of the mass and energy balances for the process. They should also define the overall process performance requirements and describe the evaluations and operating philosophies upon which those performance requirements are based. A summary cost estimate of capital and operating costs and, if possible, an analysis of how costs could be improved for future commercial projects should also be included.

The following deliverables are also to be included as components of the first Public Design Report addressing the preliminary design:

#### 6.5.1 Process Flow Diagrams

The Participant shall provide a complete set of non-proprietary Process Flow Diagrams with all updates and modifications.

#### 6.5.2 Stream Data

The Participant shall provide a complete set of all nonproprietary stream data. This would include both the expected values and ranges of flows, stream properties, and constituents at various operating conditions.

#### 6.5.3 Equipment List

The Equipment List consists of a summary of the major equipment for the plant. Equipment is to be sorted by Flow Diagram, equipment type, and equipment number. General description data are to be provided for each equipment item, including, but not limited to, the number required for operation, size or capacity, major nonproprietary operating and design parameters, and manufacturer and/or vendor.

The following deliverables are also to be included as components of the Final Public Design Report:

#### 6.5.4 Stream Data

The participant shall provide to the DOE a complete set of all nonproprietary stream data. This would include both the expected values and ranges of flows, stream properties, and constituents at various operating conditions.

#### 6.5.5 Equipment List

The Equipment List consists of a summary of the major equipment for the plant. Equipment is to be sorted by Flow Diagram, equipment type, and equipment number. General description data are to be provided for each equipment item, including, but not limited to, the number required for operation, size or capacity, major nonproprietary operating



and design parameters, costs, associated bulk quantities, and manufacturer and/or vendor.

#### 6.5.6 Drawings

The Participant shall include a complete set of nonproprietary Process Flow Diagrams, Equipment Plot and Elevation Drawings, and Process and Instrumentation Diagrams, which describe the plant configuration at the end of the demonstration period.

#### 6.5.7 Plant Capital Cost Data

The Participant shall include the data and documentation for all costs associated with the construction of the plant, with a breakdown which would permit this information to be used for projecting future plant construction costs. This breakdown should include the level of detail requested for capital costs as discussed in Section 3.2, Federal Assistance Program/Project Status Report.

#### 6.5.8 Plant Operating Cost Data.

The participant shall include the data and documentation for all costs associated with the operation of the plant under conditions that represent reliable plant performance. Actual costs should be provided in the same format as proposed costs given in Exhibit G, Appendix K, Summary of Operating and Startup Costs, of the PON. Fixed operating and maintenance costs should include operating manpower requirements and labor costs, maintenance labor and material costs, and administrative and support labor costs. Variable operating costs should be itemized separately for commodities such as fuels, sorbents, chemicals, water, auxiliary power, and waste effluents. Startup costs should be itemized. Also, material and energy balances should be provided for operating conditions that represent reliable performance.

### 6.6 Environmental Report (A/1,5/A,B).

The Participant shall submit the environmental information specified in Appendix J of the Program Opportunity Notice. This detailed site and project specific information will be used as the basis for site specific NEPA documents to be prepared by DOE for each selected project. These documents shall be prepared, considered, and published in full conformance with the requirements of 40 CFR Parts 1500 to 1508, and in advance of a go/no-go decision to proceed beyond Phase 1. Federal funds for the Clean Coal Technology Program will not be provided for project activities beyond Phase 1 until the NEPA process has been successfully completed.

The Participant shall update the Environmental Report as required to reflect any project or process changes which would significantly alter the content or conclusions of the report.

- 6.7 Federal Cash Transactions Report (SF 272) to be used only for advance payment by letter of credit (M/3/B).

DOE review and approval of these reports are not required.

- 6.8 Technical Conference Papers and Journal Articles (A/1,3/A,B).

Publication in open literature is desirable; however, DOE requires a prepublication review and patent clearance. Copies of the proposed papers or articles must be provided to DOE as explained in Section 4.0 above.

- 6.9 Public Information Release (A/1,5/A,B). See Article XXIII of this Cooperative Agreement.

- 6.10 Conference Record (A/1,3/A,B).

The Conference Record documents for the DOE COT, DOE Contracting Officer, and the Participant an understanding of significant decisions, direction or redirection, or required actions resulting from meetings with DOE representatives. It is required for all formal project review meetings, including technical progress reviews, design and construction reviews, and operations reviews. It is also required for any meeting, conference, or phone conversation in which a decision is made that may significantly change the schedule, labor, cost, or technical aspects of the contractual agreement or the approved baseline plans. The report shall contain the following information as applicable:

- ◆ Report title ("Conference Record"), number, and the date prepared.
- ◆ Agreement title and number and the Participant's name and address.
- ◆ Date of meeting or telephone conversation with a list of those involved and their titles.
- ◆ Subject(s) discussed, decisions reached, and directions given.
- ◆ Variances from previous directions and conclusions.
- ◆ Required actions.
- ◆ Distribution.
- ◆ Signature of preparer.

- 6.11 Hot Line Report (A/1,4/A,B).

The "Hot Line" Report may be used to report a major breakthrough in research, development, or design; an event causing a significant schedule slippage or cost overrun; achievement or failure to achieve an important technical objective; or any requirement for quickly documented direction or redirection. Examples include:

- ◆ Any change in the availability of funds which the Participant believes may have a material and adverse effect on the project.
- ◆ Any change in supply contracts or market conditions which the Participant believes may have a material and adverse effect on the project.
- ◆ Any suspension, revocation or denial of a permit or any notice of a potential violation of a permit, the loss or absence of which the Participant believes may have a material and adverse effect on the project.
- ◆ Any default or threatened default by any contractor that the Participant believes may have a material and adverse effect on the project.

The report shall be submitted by the most rapid means available, usually electronic, and should confirm telephone conversations with DOE representatives. Identification as a "Hot Line Report" serves notice at each link in the delivery chain that speed in handling is required. Unless otherwise agreed by the parties involved, DOE is expected to take action and respond in a similarly expeditious manner. The report should include:

- ◆ Participant's name and address.
- ◆ Agreement title and number.
- ◆ Date.
- ◆ Brief statement of problem or event.
- ◆ Anticipated impacts.
- ◆ Corrective action taken or recommended.

In addition to those incidents noted above, special attention should be given to using Hot Line Reports to document the incidents listed below.

- ◆ Any fatal or imminently fatal injury, accident, or any incident involving hospitalization of five or more persons is to be immediately reported.
- ◆ Any significant environmental permit violation is to be reported as soon as possible, but within 12 hours of incident.
- ◆ Other incidents that have the potential for high visibility in the media are to be reported as quickly as possible, but no later than 12 hours. When an incident is reported in accordance with the following two items, the participant shall conduct an investigation of its cause and make an assessment of the adequacy of resultant action. A written report is required on a schedule to be established at the time of the initial report.

- ◆ Any unplanned event which is anticipated to cause a schedule slippage or cost increase significant to the project is to be reported as soon as possible but within 5 working days.
- ◆ An incident which causes a significant process or hazard control system failure, or is indicative of one which may lead to any of the above defined incidents, is to be reported as soon as possible, but within 5 working days. When an event results in the need to issue a written or verbal statement to the local media, the statement is to be cleared first, if possible, by the appropriate Energy Technology Center's Public Information Officer and coordinated with the COR.

DOE review and approval of these reports are not required.

## 7.0 Reports Called for in Statement of Work

The Participant shall provide the following deliverables called for in the Statement of Work, Attachment A:

### 7.1 PHASE 1

#### 7.1.1 Project Management Plan (0,A/1,5/A,B)

A detailed Project Management Plan shall be provided in accordance with the guidelines in Appendix 1 to Attachment A. The plan shall be updated as appropriate to reflect significant changes to the project baseline.

### 7.2 PHASE 2

#### 7.2.1 Project Management Plan (A/1,5/A,B)

The plan shall be updated as appropriate to reflect significant changes to the project baseline.

#### 7.2.2 Plant Start-Up Plan (A/1,5/A,B)

The Participant shall prepare a Plant Start-Up Plan. The plan will be defined by the system descriptions (SD's) and a plant start-up schedule. The boundary of each SD will be identified on appropriate drawings. The plant start-up schedule incorporating the SD's will be developed after completion of a list of SD's during Phase 2. The plan will be submitted to the DOE at least 60 days prior to its implementation.

#### 7.2.3 Test Plan (A/1,5/A,B)

The Participant shall develop a Test Plan for the demonstration period of the facility. This document will provide for demonstration tests to obtain the data base and experience necessary for the detailed design, operation,

control and maintenance of large-scale commercial plants. The Test Plan shall describe the overall test program goals, the strategies for achieving those goals, and the sequencing of individual tests. It should include detailed discussion of such topics as test matrices, procedures for sampling and analysis, data manipulation methods, success criteria, and manning schedules. It should also designate the Participant's plans for preparing and submitting the Demonstration Test Reports described in Section 7.3.2 below.

The Test Plan is to be developed in Phase 2 and submitted to the DOE for approval at least 60 days prior to the commencement of Phase 3.

#### 7.2.4 Start-Up and Modification Report (A/1,5/A,B)

A Start-Up and Modification Report shall be provided to DOE for review within 60 days following the completion of plant start-up. Any process or equipment modifications made to the originally reported design of plant, as a result of late design changes or deficiencies encountered during commissioning and start-up activities, should be documented. The scope of the report should:

- ◆ Describe the problem with the particular process or item of equipment.
- ◆ Identify the modification that was implemented to correct the problem.
- ◆ Evaluate the impacts of the modification.
- ◆ Document the cost of the modification.

The start-up activities should also be documented giving information such as:

- ◆ Planned and actual start-up schedule.
- ◆ Production rate buildup.
- ◆ Environmental data.
- ◆ Cost data on start-up and start-up modifications.

If performance tests are carried out, the results should be reported in this document. Performance tests are tests carried out on process units to verify that each unit will operate as designed before the unit is accepted from the vendor and turned over to the plant operating staff. Typically, these tests will provide the operating data (flow rate, temperature, pressure, analytical data, etc.) needed to confirm the performance of the unit.

### 7.3 PHASE 3

#### 7.3.1 Project Management Plan (A/1,5/A,B)

The plan shall be updated as appropriate to reflect significant changes to the project baseline.

#### 7.3.2 Demonstration Test Reports (Q,A/1,5/A,B)

Demonstration Test Reports shall document and discuss plant operating data and performance. These reports shall be based, if possible, on logical subdivisions in the test plan (campaigns, test series, etc.) which differentiate a significant change in feedstock, a period of sustained operation, or a change in operating conditions, for example. The reports shall be provided on at least a quarterly basis, even if a natural test plan segment cannot be documented within that time frame.

#### 7.3.3 Disposition Plan (A/1,3/A,B)

(A Disposition Plan is not required if disposition of the demonstration facility was not proposed.)

#### 7.3.4 Technology Performance and Economic Evaluation Report (A/1,5/A,B)

The Participant shall prepare and provide to DOE an Economic Evaluation Report which discusses the Participant's results of an economic analysis and evaluation for commercializing the demonstrated technology. This report should be a natural result of the Participant's commercial plant design and should discuss the Participant's experience in operating the technology. The report should include a discussion of costs associated with:

- ◆ Capital equipment.
- ◆ Land.
- ◆ Coal.
- ◆ Water.
- ◆ Electricity.
- ◆ Operating costs.
  - Personnel.
  - Expendables.
  - Fees.
- ◆ Project contingency.
- ◆ Process contingency.
- ◆ Construction costs.
- ◆ Interest rates assumed.

A draft of this report shall be submitted to DOE no later than 60 days prior to the completion of Phase 3, upon earlier

completion of the Cooperative Agreement, or upon termination of the Agreement, whichever occurs first.

ATTACHMENT D

CONTRACT CLAUSES



## CONTRACT CLAUSES

For purposes of this Attachment, the term "contract" means a procurement contract awarded under the Cooperative Agreement and a procurement subcontract awarded under such a contract; the term "solicitation" means an invitation for bids, request for quotations or proposals, or any other type of solicitation issued by the Participant for the purpose of awarding a contract. The following clauses shall be included, as indicated below, in contracts and in solicitations:

1. For contracts other than small purchases: administrative, contractual, or legal remedies for violations or breaches of contract terms.

2. For contracts over \$10,000: provisions for terminating the contract for default or for convenience, including the manner by which the termination will be effected and the basis for settlement.

3. For construction contracts over \$10,000: a requirement that the contractor comply with Executive Order 11246 of September 24, 1965 entitled "Equal Employment Opportunity," as amended by Executive Order 11375 of October 13, 1967 and as supplemented in U.S. Department of Labor regulations (41 C.F.R. Part 60).

4. For all construction or repair contracts: a requirement that the contractor comply with the Copeland Anti-Kickback Act (18 U.S.C. 874) as supplemented in U.S. Department of Labor regulations (29 C.F.R. Part 3).

5. For construction contracts over \$2,000 and for all contracts over \$2,500 involving the services of mechanics or laborers: a requirement that the contractor comply with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330) as supplemented by U.S. Department of Labor regulations (29 C.F.R. Part 5).

6. For all contracts other than small purchases: a clause requiring the contractor to furnish such information the Participant must receive in order to comply with the reporting requirements under this Cooperative Agreement.

7. For all contracts over \$10,000: a clause requiring the contractor to retain records pertinent to the contract for three years after the contractor receives final payment. The clause must also provide that if an audit, litigation, or other action involving the contract records commences before the end of the three-year retention period, the records must be retained until all issues arising out of the action are resolved, or until the end of the three-year period, whichever is later.

8. For all contracts over \$10,000: a clause providing that the Participant, DOE, and the Comptroller General of the United States, or any of their duly authorized representatives shall have access to any books, documents, papers, and records (including those on electronic media) of the contractor which are directly pertinent to that specific contract for the purpose of making audit, examination, excerpts, and transcripts. This clause shall specify that the right of access shall last as long as the contractor retains records which are directly pertinent to that specific contract.

9. For contracts and subcontracts over \$100,000: a clause requiring the contractor or subcontractor to comply with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. 1857(h)), section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 C.F.R. Part 15).

10. For all contracts and subcontracts: a clause requiring compliance with all applicable mandatory standards and policies relating to energy efficiency contained in the state energy conservation plan issued pursuant to the Energy Policy and Conservation Act (42 U.S.C. 6201, et seq.).

11. In solicitations: the following Instructions for and Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Covered Transactions:

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions Instructions for Certification

1. By signing and submitting this proposal, the prospective lower tier Participant is providing the certification set out below.

2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier Participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the U.S. Department of Energy may pursue available remedies, including suspension and/or debarment.

3. The prospective lower tier Participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier Participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

4. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "Nonprocurement List," "DOE List," "Participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the DOE rules implementing Executive Order 12549. See, 10 C.F.R. Part 1036 [53 F.R. 19204 (May 26, 1988)]. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of these rules.

5. The prospective lower tier Participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the U.S. Department of Energy.

6. The prospective lower tier Participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

7. A Participant in a covered transaction may rely upon a certification of a prospective Participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A Participant may decide the method and frequency by which it determines the eligibility of its principals. Each Participant may, but is not required to, check the Nonprocurement List.

8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a Participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

9. Except for transactions authorized under paragraph 5 of these instructions, if a Participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the U.S. Department of Energy may pursue available remedies, including suspension and/or debarment.

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions

(1) The prospective lower tier Participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

(2) Where the prospective lower tier Participant is unable to certify to any of the statements in this certification, such prospective Participant shall attach an explanation to this proposal.

12. In solicitations, the following certification regarding lobbying:

CERTIFICATION FOR CONTRACTS, GRANTS, LOANS, AND COOPERATIVE AGREEMENTS

The undersigned certifies that, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the Federal contract, grant, loan or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact which reliance was placed upon when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$100,000 for each such failure.

APPENDIX M

MODEL REPAYMENT AGREEMENT

## MODEL REPAYMENT AGREEMENT

### ARTICLE I. GENERAL OBJECTIVE

The purpose of this agreement is to set forth the terms and conditions under which \_\_\_\_\_ (defined herein as the Participant) shall repay to the United States Department of Energy (DOE) an amount up to (i.e., not to exceed) the Government's share of total project costs paid under Cooperative Agreement No. DE- \_\_\_\_\_.

### ARTICLE II. DEFINITIONS

"Contracting Officer" means the DOE official authorized to execute awards, financial agreements, and amendments thereto on behalf of DOE and who is responsible for administering this Repayment Agreement.

"Cooperative Agreement" means the financial assistance award made by the United States Department of Energy (DOE) to the Participant, Instrument Number \_\_\_\_\_ on \_\_\_\_\_, 1991 and subsequent amendments.

"DOE" means the United States Department of Energy and any successor department or agency.

"DOE share" means the portion of the total project costs paid by DOE under the Cooperative Agreement.

"Government" means the government of the United States, including DOE.

"Participant" means [INSERT NAME OF ORGANIZATION SIGNING THE REPAYMENT AGREEMENT] and its successors and assigns.

"Project" means the set of activities described in Article IX (Allowable Preaward Costs) and in Attachment A, Statement of Work, of the Cooperative Agreement.



"Total project costs" means the total amount of allowable direct and indirect costs incurred by the Participant and paid, in part, by DOE under the Cooperative Agreement.

"United States" means any of the several States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, and any territory or possession of the United States.

#### ARTICLE III. TERM OF THIS REPAYMENT AGREEMENT

This Repayment Agreement shall become effective on the date specified in the Cooperative Agreement as the end of Phase 3 (Operation), except that if the Participant unilaterally withdraws or terminates its participation under the Cooperative Agreement, this Repayment Agreement shall become effective on the date the Cooperative Agreement is terminated. This Repayment Agreement shall expire 20 years from its effective date or on the date the entire DOE share has been repaid. This Repayment Agreement may be terminated upon a determination by the Secretary of Energy or designee that repayment places the Participant at a competitive disadvantage in domestic or international markets.

#### ARTICLE IV. DEMONSTRATION TECHNOLOGY

For purposes of this Repayment Agreement, the "Demonstration Technology" shall consist of *[DOE and the Participant will agree on this description]*.

#### ARTICLE V. AMOUNT OF REPAYMENT

The amount of the Participant's repayment obligation shall be based only on the sale, lease, or licensing of the Demonstration Technology, as defined in Article IV, in applications and for use at facilities located in the United States. The amount of repayment shall be based upon the revenues from the sum of one or both of the following sources during commercialization of the Demonstration Technology:

<u>Repayment Amount</u>	<u>Revenue Source</u>
0.5%	Gross revenues from equipment sales/leases
5.0%	Royalties and licensing fees

For purposes of determining the amount of repayment, commercialization shall be deemed to have begun on the effective date of this Repayment Agreement or *[INSERT DESCRIPTION OF TRIGGERING EVENT(S) WHICH DEFINE THE GRACE PERIOD: E.G., ALL SALES AFTER THE 3RD UNIT OF THE DEMONSTRATION TECHNOLOGY]*, whichever occurs later.

(A) Sales/Leases of Equipment

The Participant shall pay DOE an amount equal to 0.5% of the gross revenues from the sale or lease of equipment manufactured, fabricated, or assembled as a result of commercialization of the Demonstration Technology. The Participant shall include in all contracts or agreements with any entity which is involved, directly or indirectly, in manufacturing, selling, leasing, or licensing the use of Demonstration Technology equipment, a provision requiring that sales and leases of such equipment and associated revenue be reported on an annual basis to the Participant. A list of entities (including name, address, and telephone number of responsible official) subject to this reporting requirement is provided in Attachment A and shall be updated, as necessary, by the Participant.

(B) License Fees

The Participant shall pay DOE an amount equal to 5.0% of the gross revenues from license fees paid for use of the Demonstration Technology. The Participant shall include in all contracts or agreements with any entity which acquires the right to license the use of the Demonstration Technology, a provision requiring that all such licenses and sub-licenses and associated revenues be reported on an annual basis to the Participant. A list of entities (including name, address, and telephone number of responsible official) subject to this reporting requirement is provided in Attachment B and shall be updated, as necessary, by the Participant.

(C) Alternative Sources

[INSERT ANY PERTINENT PROVISIONS DURING NEGOTIATIONS]

ARTICLE VI. SCHEDULE OF REPAYMENTS

Payments to DOE shall be calculated on an annual basis, and shall be due within 60 days after each one-year period following the effective date of this Repayment Agreement.

ARTICLE VII. REPORTING AND RECORD RETENTION REQUIREMENTS

(A) Annual Report to DOE

Within 60 days after the end of each one-year period, the Participant shall submit a written report to DOE which, for the one-year period just elapsed, provides the applicable data described below:

- (1) The total dollar amount of sales and leases of Demonstration Technology equipment;
- (2) Quantities and descriptions of Demonstration Technology equipment sold and leased;
- (3) The total dollar amount of license fees paid for use of the Demonstration Technology;
- (4) Quantities and descriptions of Demonstration Technology transactions under which license fees were paid;
- (5) The total amount of revenue reported by each entity identified in Attachments A and B;
- (6) Sum of the total amounts of gross revenues from each of the sources described in Article V, Sections A and B; and
- (7) The total amount owed or paid to DOE, and the amount of the DOE share remaining to be paid in succeeding years under this Repayment Agreement.

(B) Period of Retention

With respect to each annual report to DOE, the Participant shall retain, for the period of time prescribed in this paragraph, all related financial records, supporting documents, statistical records, and any other records the Participant reasonably considers to be pertinent to this Repayment Agreement. The period of required retention shall be from the date each such record is created or received by the Participant until three years after one of the following dates, whichever is earlier: the date the related annual report is received by DOE; or the date this Repayment Agreement expires or the final payment to DOE is received. If any claim, litigation, negotiation, investigation, audit, or other action involving the records starts before the expiration of the three-year retention period, the Participant shall retain the records until such action is completed and all related issues are resolved, or until the end of the three-year retention period, whichever is later. The Participant shall not be required to retain any records which have been transmitted to DOE by the Participant.

(C) Authorized Copies

Copies made by microfilm, photocopying, or similar methods may be substituted for original records. Records originally created by computer may be retained on an electronic medium, provided such medium is "read only" or is protected in such a manner that the electronic record can be authenticated as an original record.

(D) Access to Records

DOE and the Comptroller General of the United States, or any of their authorized representatives, shall have the right of access to any books, documents, papers, or other records (including those on electronic media) which are pertinent to this Repayment Agreement. The purpose of such access is limited to the making of audits, examinations, excerpts, and transcripts. The right of access described in this paragraph shall last as long as the Participant retains records which are pertinent to this Repayment Agreement.

(E) Restrictions on Public Disclosure

The Federal Freedom of Information Act (5 U.S.C. § 552) does not apply to records the Participant is required to retain by the terms of this Repayment Agreement. Unless otherwise required by law or a court of competent jurisdiction, the Participant shall not be required to disclose such records to the public.

(F) Flow Down of Records Retention and Access Requirements

In any contract or other agreement subject to the reporting requirements described in Article V, Sections A and B, the Participant shall include clauses substantially similar to the records retention and access requirements set forth in sections (B) and (D) of this Article.

ATTACHMENTS

- A. Purchasers and Lessees of Demonstration Technology Equipment.
- B. Entities Required to Pay License Fees.

\_\_\_\_\_  
Signature of Authorized Official

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Signature of DOE Contracting Officer

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name

\_\_\_\_\_  
Title

## APPENDIX N

### ENVIRONMENTAL MONITORING PLAN GUIDELINES

NOTE: The information described in this Appendix need not be submitted with the Proposal.

This Appendix is intended for the Proposer's information to assist with planning the Project. The information discussed herein will be required after selection.

## GUIDELINES FOR ENVIRONMENTAL MONITORING PLAN

### I. PURPOSE

The Department of Energy (DOE) views the identification and characterization of areas of concern and the development of an information base for the assessment and mitigation of impacts associated with the replication of Clean Coal Technology projects to be a fundamental purpose of environmental and health monitoring and an important component of the demonstration project. Monitoring should identify the environmental constraints and/or advantages of potential commercial versions of the demonstrated technology. In addition, environmental monitoring may be necessary to quantify the project-specific and site-specific environmental impacts predicted in the National Environmental Policy Act (NEPA) documentation, to detect any environmental and health problems requiring remedial action, and to confirm the performance of environmental mitigation measures implemented as part of the project. Toward these ends, DOE requires that the participant perform a broad range of monitoring activities, related to potential environmental and health impacts of the project and technology, and to document these monitoring activities in the form of an Environmental Monitoring Plan (EMP).

### II. ORGANIZATION AND APPROACH

DOE requires the Participant to complete an EMP and to specifically address two classes of monitoring activity: compliance monitoring and supplemental monitoring. The two classes are defined in terms of the objectives for monitoring and serve as a basis for systematic planning and analysis. The classes are as follows:

Class I, Compliance Monitoring, is the monitoring required by other agencies of Federal, state and local government (other than DOE) to satisfy statutes, regulations, and terms of leases, permits, grants, and other requirements. The EMP documents the extent of compliance monitoring activities, provides for reporting of relevant results to DOE, and shows their relationship to monitoring activities to meet the objectives of Supplemental Monitoring.

Class II, Supplemental Monitoring, is monitoring required in addition to compliance monitoring to establish the environmental characteristics and potential impacts of the clean coal technology and associated facilities, processes, and activities. This monitoring is intended to satisfy two objectives: first, to develop the information base for identification, assessment, and mitigation of environmental problems associated with the replication of the technology; and second, to identify and confirm environmental impacts and performance predicted in the NEPA documentation.

With regard to the first objective, activities may include but are not limited to measurements of processes, feedstocks, operating conditions, discharges, ambient environmental conditions, industrial hygiene, occupational health and safety, and impacts on public health and ecological systems. Environmental characterization emphasizes the special attributes of the technology and pollutants specific to it, rather than attributes common to existing commercial technologies. The Participant will be required to identify the salient process and operating parameters that are likely to affect environmental discharge rates and compositions, waste generation, and other relevant environmental characteristics of construction and operation. The EMP must show how information about those parameters will be reported and related to analyses of the monitoring data. Monitoring of ambient environmental concentrations and impacts may be required to assist characterization of the source and/or to assess the transport and effects of pollutants or other impacts of the technology that are poorly understood.

One important aspect of this first objective involves consideration of environmental impacts from both regulated and unregulated pollutants. Hazardous Air Pollutants (HAPs) emissions are an example of currently unregulated emissions that may affect commercialization of technologies demonstrated under the CCT program and are a key concern to DOE. In order to conduct the individual projects within the CCT program in a consistent manner, guidelines in the monitoring of HAPs to be incorporated in EMPs for projects have been formulated and are included as Attachment A to this Appendix. The guidelines address the HAPs to be monitored, the typical streams of interest, and sampling and analytical methods.



To meet the second objective of supplemental monitoring, the Participant may be required to conduct monitoring activities to identify and confirm potential environmental impacts identified in the Environmental Information Volume (EIV) and in subsequent NEPA documentation. It is recognized that, in some cases, no supplemental monitoring may be required to meet this objective. In the latter cases, the basis for the determination that such supplemental monitoring is not required should be stated in the Draft EMP and Final EMP.

Monitoring should be considered for all phases of the project, including pre-construction, pre-operation, demonstration, post-demonstration operation, shut-down, site reclamation, and long-term monitoring of disposed wastes, disturbed ecosystems, and performance of mitigative measures, where appropriate. Environmental impacts of operation and disposition of the facility after completion of the CCT demonstration phase must be considered by DOE, where required by its responsibilities under NEPA. The DOE, in consultation with the Participant and others, will determine whether and to what degree monitoring is required to ensure that the level of environmental impacts predicted in NEPA documentation will be achieved. The EMP will reflect the results of this determination.

In cases of the uncertain occurrence of environmental effects or formation and transport of pollutants to media, a phased approach to monitoring should be considered. In such cases, initial characterization or monitoring should be used to determine the need and scope for further monitoring activity. Participants should indicate analyses, reports, decision milestones, and points for DOE review in the EMP.

### III. IMPLEMENTATION

#### TIMING

The EMP shall be developed, in consultation with DOE, in two stages, as described herein. The Participant is required to develop a Draft EMP that must be delivered to DOE during the first project budget period. The Final EMP must then be developed in consultation with DOE no later than 60 days after commencement

of Phase 2 of the project. It should be recognized that the Final EMP is subject to revision and updating as the project continues.

#### CONTENTS OF EMP

The Draft EMP may contain general information about the monitoring activities; whereas, the Final EMP will specify the details regarding the sampling locations, monitoring parameters, and procedures. A suggested format for the EMP is provided as Attachment B to this Appendix. This format is not mandatory, but all topics that are relevant should be addressed.

EMP Purpose and Scope - This section should define the overall approach to the monitoring and measurement activities. If a phased approach is to be used, the logic flow and decision criteria should be discussed. The scope of the monitoring should be described in terms of both duration and environmental media considered.

Project/Process Description - The technology should be described, with reference to appropriate process flow diagrams. Process and discharge streams should be identified, along with descriptions of pollution control systems.

Compliance Monitoring - The permits and the conditions of the permits should be presented in this section. The monitoring requirements of the permits should be discussed in terms of both the type of monitoring (source, ambient, etc.) and the timing (i.e., phase of the project). This provides the basis for determining what types of supplemental monitoring may be required.

Supplemental Monitoring - The two overall objectives related to supplemental monitoring should be discussed: (1) to develop the information base for identification, assessment, and mitigation of environmental problems associated with the replication of the technology; and, (2) to identify and confirm environmental impacts and performance predicted in the NEPA documentation. The specific plans to meet these objectives should be described. The parameters that establish process operating conditions and determine environmental discharge characteristics can be defined. The procedures for establishing environmental

performance and operating conditions should be addressed. Finally, the schedule for this monitoring should be described in terms of duration and frequency. ^

Integration of Compliance and Supplemental Monitoring - In order to eliminate any redundancy between compliance and supplemental monitoring, the two should be integrated, with the monitoring activities then broken down by project phase and monitoring media. Tables should be prepared that show the parameters to be monitored, the stream/sampling point identification, the frequency of sampling, and the value to be reported (e.g., average, minimum/maximum, range).

Data Management & Reporting - This section should describe the data management system to be used. The reporting schedule should be given (e.g., quarterly and annual reports). The content and format of the reports should be described, including the types of analyses to be provided (e.g., heat and material balances, trace element distribution, pollution control equipment performance).

**ATTACHMENT A**

**OUTLINE FOR ENVIRONMENTAL MONITORING PLAN**

## ENVIRONMENTAL MONITORING PLAN

-- SUGGESTED FORMAT --

### 1.0 SUMMARY

### 2.0 INTRODUCTION

#### 2.1 EMP Purpose and Scope

#### 2.2 Background & History of the Project

##### 2.2.1 Project Schedule

##### 2.2.2 Project Site

### 3.0 PROJECT/PROCESS DESCRIPTION

#### 3.1 Process Flow Description

#### 3.2 Site & Facilities Description

##### 3.2.1 Raw Material Storage & Handling

##### 3.2.2 Product Storage & Handling

##### 3.2.3 Intermediates & By-Products Storage & Flows

##### 3.2.4 Utilities & Offsite Facilities (including waste disposal sites)

#### 3.3 Emissions & Discharges

##### 3.3.1 Atmospheric Emissions & Control Systems

##### 3.3.2 Aqueous Discharges & Control Systems

##### 3.3.3 Waste Discharges & Management Systems

### 4.0 COMPLIANCE MONITORING

#### 4.1 Scope of Permits & Permit Conditions

##### 4.1.1 Source Monitoring

##### 4.1.2 Ambient Monitoring

##### 4.1.3 Workplace Monitoring

##### 4.1.4 Process & Operating Conditions Monitoring

#### 4.2 Activities by Phase

##### 4.2.1 Pre-Construction (baseline)

##### 4.2.2 Construction

##### 4.2.3 Operation

##### 4.2.4 Facility Shut-Down & Site Reclamation

##### 4.2.5 Post Shut-Down

### 5.0 SUPPLEMENTAL MONITORING

#### 5.1 Purpose

##### 5.1.1 Environmental Characterization Related to Commercialization

##### 5.1.2 Environmental Impacts Related to NEPA

## 5.2 Scope

### 5.2.1 Test Plans

### 5.2.2 Process Measurements

### 5.2.3 Heat & Material Balances

### 5.2.4 Environmental Performance of Overall Plant and Subsystems

### 5.2.5 Personnel Exposure and Workplace Monitoring

### 5.2.6 Public Safety & Emergency Response

## 5.3 Schedule

### 5.3.1 Duration of Monitoring

### 5.3.2 Frequency of Monitoring

## 6.0 INTEGRATION OF COMPLIANCE AND SUPPLEMENTAL MONITORING

### 6.1 Pre-Construction Monitoring

#### 6.1.1 Ambient Air Quality

#### 6.1.2 Surface Water Quality

#### 6.1.3 Ground Water Quality

#### 6.1.4 Terrestrial Ecology

#### 6.1.5 Aquatic Ecology

#### 6.1.6 Noise Levels

### 6.2 Construction Monitoring

#### 6.2.1 Gaseous Discharges

#### 6.2.2 Aqueous Discharges

#### 6.2.3 Waste Generation and Disposal

#### 6.2.4 Noise Levels

#### 6.2.5 Ambient Impacts

#### 6.2.6 Worker Health & Exposure

### 6.3 Operational Monitoring

#### 6.3.1 Process and Operating Conditions

#### 6.3.2 Gaseous Streams

#### 6.3.3 Aqueous Streams

#### 6.3.4 Solid Wastes

#### 6.3.5 Ambient Air Quality

#### 6.3.6 Surface Water Quality

#### 6.3.7 Ground Water Quality

#### 6.3.8 Worker Health & Exposure

#### 6.3.9 Noise Levels

## 6.4 Post-Operational Monitoring

6.4.1 Ambient Air Quality

6.4.2 Surface Water Quality

6.4.3 Ground Water Quality

6.4.4 Terrestrial Ecology

6.4.5 Aquatic Ecology

6.4.6 Disposal Site Conditions

## 7.0 Data Management & Reporting

7.1 Purpose & Scope

7.2 Data Management System

7.3 Reporting Schedule

7.4 Content & Format of Reports

## Appendices

NEPA Documentation

Waste Management Plan

Industrial Hygiene Program

Sampling & Analytical Procedures

QA/QC Program

**ATTACHMENT B**

**GUIDELINES FOR INCORPORATING THE MONITORING  
OF HAZARDOUS AIR POLLUTANTS IN  
ENVIRONMENTAL MONITORING PLANS FOR  
CLEAN COAL PROJECTS**



## ATTACHMENT B

### GUIDELINES FOR INCORPORATING THE MONITORING OF HAZARDOUS AIR POLLUTANTS IN ENVIRONMENTAL MONITORING PLANS FOR CLEAN COAL PROJECTS

#### Purpose of Monitoring

Title III of the 1990 Amendments to the Clean Air Act (CAA) identifies 189 air toxics, or Hazardous Air Pollutants (HAP) for which technology-based standards are to be set by the U. S. Environmental Protection Agency (EPA). There is also a provision requiring that the EPA conduct a study of impacts of emissions of HAPs from electric utilities on public health. Based on this study EPA will determine whether such sources should be regulated under Title III of the CAA.

DOE's interest in supporting technologies under the Clean Coal Program is in obtaining adequate information to evaluate and substantiate commercial readiness. Consideration of environmental impacts from both regulated and unregulated pollutants is important in the evaluation of commercial readiness. Each Clean Coal project is required to develop and implement an Environmental Monitoring Plan (EMP) which addresses both compliance monitoring required under permit conditions and supplemental monitoring. Supplemental Monitoring is monitoring required in addition to compliance monitoring to establish the environmental characteristics and potential impacts of the clean coal technology and associated facilities, processes, and activities.

This guidance on the monitoring of HAPs to be incorporated in EMPs for projects in the Clean Coal Technology Program addresses the HAPs to be monitored, the typical streams of interest, and sampling and analytical methods. It is intended that this guidance be used to develop a site-specific monitoring plan for individual projects in the Clean Coal Technology Program. The site-specific monitoring plan would generate data on emissions of HAPs that would be compatible with data obtained in other studies being conducted within DOE and by the Electric Power Research Institute (EPRI) - the Power Plant Integrated Systems: Chemical Emissions Study (PISCES) project.

### Specific Monitoring Objectives

The primary objective of monitoring is to quantify the mass flow rate of listed hazardous air pollutants (HAPs) in stack gases emitted to the ambient air at Clean Coal demonstration project sites, under both baseline and demonstration operating conditions. A secondary purpose is to quantify the removal of HAPs in gaseous streams across pollution control subsystems, under both baseline and demonstration operating conditions.

The results of the monitoring would provide input to the congressionally-mandated study by the U. S. Environmental Protection Agency (EPA) on impacts of emissions of listed HAPs from electric utilities, as required in Title III of the Clean Air Act Amendments of 1990. In addition, the data would provide a basis for evaluating the potential effects of air toxics regulation on the commercialization of technologies demonstrated under the Clean Coal Technology Program.

### Operating Conditions During Monitoring

At a minimum, data on HAP stack emissions should be obtained for the Clean Coal technology operating at design conditions. For retrofit and repowering technologies, data for baseline operation before installation of the CCT demonstration should be obtained, where possible.

For a complete assessment of emissions, data on HAPs in gaseous streams, upstream and downstream from pollution control subsystems, should also be obtained. This would allow an evaluation of the performance of individual pollution control subsystems (e.g., ESP) in removing HAPs.

The value of additional data sets under additional operating conditions should be considered if the demonstration project is to be conducted for other feedstocks (i.e. coal and/or desulfurization sorbents) or discrete operating conditions (e.g. low-NO<sub>x</sub> burners with and without advanced overfire air).

### HAPs to be Monitored

In order to obtain data compatible with both the EPRI and DOE studies, a list of HAPs to be monitored in Clean Coal Projects has been developed based on a comparison of the compounds identified in these two studies. This list is shown in Table N-1.

### Streams to be Monitored

An example of streams of interest for demonstration operation for one possible combination of Clean Coal technologies is shown in Table N-2. In this example, it is assumed that modifications to the existing burners are made to control emissions of nitrogen oxides and a post-combustion control subsystem is added to remove sulfur oxides. The parameters to be monitored are also listed in Table N-2.

Other streams may be monitored as part of either compliance or supplemental activities of the overall Environmental Monitoring Plan for the Clean Coal project. If so, the monitoring for HAPs should be coordinated with the other EMP monitoring to increase the value of both sets of data.

### Sampling and Analytical Techniques

In order to ensure compatibility of results, sampling and analytical procedures in the EPRI and DOE air toxics studies should also be used here. However, it is recognized that certain modifications may be required on a site-specific basis. A summary of typical sampling methods is shown in Table N-3 and a summary of typical analytical methods is shown in Table N-4. Many of these methods are taken from an EPA document on physical and chemical test methods (Ref. 1).

### Monitoring of Process Parameters

In order to correlate the results of the sampling and analytical effort, selected process parameters for the overall plant should also be reported with the analytical results. For example, plant or unit heat rate, generator load, and net electrical production should be provided. Information necessary to establish

the operating conditions for pollution control subsystems should also be reported.

#### References

1. "Test Methods for Evaluating Solid Waste - Physical/Chemical Methods," Office of Solid Waste, U.S. Environmental Protection Agency, Washington, D.C., SW-846, Third Edition, Final Update 1, November 1990.

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 Table N-1

SPECIFIC AIR TOXICS TO BE MONITORED

<u>Elements/ Compounds</u>	<u>Inorganic Compounds</u>	<u>Organic Compounds</u>
Antimony	Chlorine/Hydro-	Formaldehyde
Arsenic	chloric Acid	
Barium <sup>1</sup>	Cyanide Compounds	Semi-Volatile Organics Identified by
Beryllium	Fluorine/Hydrogen	EPA Method 8270 <sup>2</sup>
Cadmium	fluoride	- including Polycyclic Organic
Chromium	Phosphorus/	Matter
Cobalt	Phosphates	
Lead	Radionuclides	Volatile Organics Identified by EPA
Manganese		Method 8240 <sup>2</sup>
Mercury		- including Benzene, Toluene
Nickel		
Selenium		
Vanadium <sup>1</sup>		

<sup>1</sup> Not included in list of Title III HAPs, but included for comparison with results from other air toxics studies.

<sup>2</sup> Analysis by Gas Chromatography/Mass Spectroscopy

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TABLE N-2

## EXAMPLE MONITORING SUMMARY - DEMONSTRATION OPERATION

	Coal Feed	Sorbent	Stack Gas	Flue Gas from ESP	Flue Gas from Preheater	Make-up Water to SO <sub>2</sub> Removal
Flow Rate	X	X	X	X	X	X
Heating Value	X					
Sulfur Content	X					
Ash Content	X					
Particulate			X	X	X	
Loading						
Elements <sup>1</sup>						
- Total	X	X	X	X	X	X
- Vapor-Phase			X	X	X	
- Particulate			X	X	X	
Inorganics <sup>2</sup>	X	X	X	X	X	X
Volatile Organics <sup>3</sup>			X	X	X	X
Semi-Volatile Organics <sup>4</sup>			X	X	X	X
Formaldehyde			X	X	X	X
Radionuclides			X	X	X	X

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TABLE N-3

SAMPLING METHODS (Ref. 1)

<u>STREAM TYPE</u>	<u>PARAMETER</u>	<u>METHOD</u>
Flue Gas	Particulate	EPA Method 5 or 17
	Loading	
	Radionuclides	EPA Method 5 or 17
	Elements	
	- Vapor-Phase	Impingers
	- Particulate	EPA Method 5 or 17
	Inorganics and Formaldehyde	Impingers
	Volatile Organics	EPA Method 0030
	Semi-Volatile Organics	Modified EPA Method 5 with Sorbent Trap
Solid and Aqueous	All	Composited Grab Samples

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TABLE N-4

ANALYTICAL METHODS (Ref. 1)

<u>Analyte</u>	<u>Analytical Method</u>
Phosphates	Colorimetric
Hydrogen Fluoride	Specific Ion Electrode
Hydrogen Chloride	Ion Chromatography
Cyanide compounds	Distillation/Colorimetry
Trace Elements	ICAPES <sup>1</sup> or AAS <sup>2</sup>
Radionuclides	Alpha Detector
Benzene	GC/PID, FID <sup>3</sup>
Toluene	GC/PID, FID
Formaldehyde	HPLC <sup>4</sup>
Polycyclic Organic Matter	GC/MS <sup>5</sup>

<sup>1</sup> Inductively Coupled Argon Plasma Emission Spectroscopy

<sup>2</sup> Atomic Absorption Spectroscopy

<sup>3</sup> Gas Chromatography with Photoionization and Flame Ionization Detectors

<sup>4</sup> High Performance Liquid Chromatography

<sup>5</sup> Gas Chromatography with Mass Spectroscopy

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**APPENDIX 0**

**PREAWARD ACCOUNTING SYSTEM INFORMATION**

## APPENDIX O

### PREAWARD ACCOUNTING SYSTEM INFORMATION

The purpose of Appendix O, Preaward Accounting System Information, is to assist DOE in determining the adequacy and suitability of an organization's accounting system and its practices for accumulating costs under a Government Award (contract, grant, or cooperative agreement). This questionnaire should be completed by a responsible financial representative of the participant and each of its proposed subcontractors.

Participants and their proposed subcontractors should recognize that an operable accounting system that is under general ledger control is of paramount importance. This system should be developed as soon as the company anticipates an Award. A company who has not done business with the Federal government before may benefit from employing personnel or consultants who have an understanding of the applicable cost accounting regulations to assist in developing its contract cost accounting system.

It is mandatory that an adequate accounting system be in place prior to Award. Under no circumstances will DOE cost share in the implementation costs of such a system.

## PREAWARD ACCOUNTING SYSTEM INFORMATION

PROPOSER/SUBCONTRACTOR:

PROJECT TITLE:

PAGE \_\_\_ of \_\_\_

DOES THE ACCOUNTING SYSTEM PROVIDE FOR:		YES	NO
1.	Proper segregation of direct costs from indirect costs?		
2.	Identification and accumulation of direct costs by job order? <i>Under a job order cost system, subsidiary cost records for each individual project are generally available.</i>		
3.	A logical and consistent method for the allocation of indirect costs to intermediate and final cost objectives?		
4.	Accumulation of costs under general ledger control?		
5.	A timekeeping system that identifies employees' labor by intermediate or final cost objectives?		
6.	A labor distribution system that charges direct and indirect labor to the appropriate cost objectives?		
7.	Interim (at least monthly) determination of costs charged to a project through routine posting of books of account?		
8.	Exclusion from costs charged to Government projects of amounts which are not allowable pursuant to FAR Part 31, Contract Cost Principles and Procedures, or other contract provisions?		
9.	Identification of costs by project line item if required by the proposed award instrument?		
SIGNATURE:		DATE:	
NAME AND TITLE:			

## APPENDIX P

### GUIDELINE FOR PREPARATION OF PARTICIPANT'S PROJECT MANAGEMENT PLAN

NOTE: The information described in this Appendix need not be submitted with the Proposal.

This Appendix is intended for the Proposer's information to assist with planning the Project. The information discussed herein will be required after selection.

## EXPLANATORY NOTE

The purpose of this document is to provide a guideline for the Participant's Project Management Plan (PMP). The use of this PMP guideline is not intended to imply that the Participant must follow this guideline section-by-section or paragraph-by-paragraph. This document is intended to include the areas of management that should be addressed for good business practice and that DOE feels are necessary for a participant to successfully manage a Clean Coal Technology Project. For smaller projects, DOE may decide after Award that less elaborate EMP's may be adequate. If the Project Performer has prepared an equivalent document, in different format, but meets the objectives of this guideline, that document may be submitted to DOE as the PMP for this project.

The PMP is to be prepared, implemented, and maintained throughout the life of the project by the Participant. Any procedures referenced must be available to DOE for inspection. The PMP, as finally agreed to by the Participant and DOE, will be the baseline document on which the project implementation will be measured and controlled.

The term "Participant" refers to the organization, individual, or entity that receives the award for a Clean Coal Technology Project.

In the context of this guideline, the "Project Performer" is the Participant that will manage and execute the selected project.

The term "Selected Project" refers to the project selected for award.

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PARTICIPANT'S  
PROJECT MANAGEMENT PLAN  
(GUIDELINE)

POLICY STATEMENT

The Project Participant does hereby approve and adopt this Project Management Plan (PMP) and further designates it as the PMP the Project Performer shall use and follow in the management of the Selected Project in the city of \_\_\_\_\_, county of \_\_\_\_\_, state of \_\_\_\_\_.

Signed by Senior Officer  
Senior Officer of Participant



## OVERVIEW

Provide a short explanation of the management philosophy and interface between the Project Performer and participants with a definition of project management teaming arrangements, describing briefly who manages day-to-day activities and how the Participant will direct the Project Performer.

Include a brief statement on management methods, Management's major concerns regarding unresolved issues, and a statement that proprietary information contained in the management plan is marked as specified in the Cooperative Agreement. (Note that proprietary information should only be included in the PMP if absolutely essential; DOE prefers to have no proprietary data in the PMP. If proprietary data is included, it should be segregated in an Appendix to the PMP.)

## PART A: MANAGEMENT PLAN

### 1.0 Management

#### 1.1 Project Responsibility

Delineate the Project Performer's responsibilities to manage, design, engineer, procure, construct, test, start up, operate, shutdown, and terminate the facility.

#### 1.2 Organization and Staffing

Explain in detail how the Project Performer will be staffed to coordinate and direct the activities of the various design, engineering, construction, operation, and terminating organizations. Provide information on how the participants will interface or become part of the Project Performer's organization. Provide details on the locations (city and state) of the participants as well as those at the facility site.

Provide an organization chart and detailed descriptions of the functions, and responsibilities of all levels of management, from senior management through supervisors.

#### 1.3 Executive Management

Explain in detail and by organization chart the executive management and interrelationship, including chain of approval, for all affiliated organizations.

#### 1.4 Functional Management Details

Explain how the project functions and how it is supported by other functional and organizational entities within the Project Performer's organization as supported by the participants. This section should address (at a minimum) the following functions:

- o Personnel activities.
- o General counsel.
- o Project engineering.
- o Construction.
- o Operations.
- o Financial administration.
- o Public affairs.
- o Internal audit.
- o Procurement (purchasing).

- o Cost engineering.
- o Data management.
- o Plant management.
- o Environmental management.
- o QA management.
- o Safety management.
- o Special project management.
- o Receiving management.
- o Inspection administration.

Include descriptions of methodology and policy and provide procedures by reference (title and/or number).

All supporting drawings, charts, and any expanded explanations may be attached as an Appendix to the PMP.

## 2.0 Management Procedures, Meetings, and Reports

### 2.1 Procedures

Provide the procedures associated with those functions which contain directions and guidelines to be used by each project participant in its day-to-day activities. The procedures to be used may be selected from existing procedures or designed and developed specifically for this project.

These procedures should be identified and listed with an abbreviated description of the procedure, the interrelationships, and the executing department (organization). These procedures should cover, but not be limited to:

- o Accounting procedures.
- o Procurement procedures.
- o Construction procedures.
- o Job training procedures.
- o Cost control procedures. (This should show the DOE interface.)
- o Change order procedures. (This should show the DOE interface.)
- o Coordination of scheduling procedures.
- o Contractor control procedures.

- o Capital commitment procedures.
- o Cash advance/disbursement procedures.
- o Personnel procedures.
- o Procurement procedures.
- o Administration procedures.
- o Communication procedures.
- o ES&H reporting procedures.

## 2.2 Meetings

Describe meetings referenced in this plan which interface each participant on an "as needed," weekly, monthly, quarterly, or semiannual basis. These meetings should identify and include all internal meetings that impact the cost, schedule, or ultimate success of the project. The meetings should include, at a minimum, the following:

- o Administrative.
- o Design reviews.
- o Schedule reviews.
- o Financial reviews.
- o Construction reviews.
- o Procurement reviews.
- o Contractor reviews.
- o Operation reviews.

## 2.3 Reports

Reports required by DOE are listed in Attachment C (Federal Assistance Reporting Checklist) and Attachment A (Statement of Work). Explain in this section how the Participant will meet the DOE reporting requirements. Internal reports, as specified in this PMP, are generated monthly and quarterly by the participants. In general, the information contained in these reports is of project-status nature. This information is used by all project participants to assess cost, schedule, and functional status for the reporting period, cumulative-to-date, and forecasts.

DOE should be provided a list of all internal project reports with identification of those reports which may be available to DOE and the schedule for their availability.

These reports should cover, but not be limited to, the following:

- o Progress reports.
- o Cost reports.
- o Change order reports.
- o Physical progress reports.
- o Cost comparison to estimate reports.
- o Procurement schedule and status reports.
- o Engineering, procurement, construction update reports.
- o Expenditure projection/incurred cost reports.
- o Capital equipment summary reports.
- o Permit schedule reports.
- o ES&H reports.
- o Start-up testing status reports.
- o Operating status reports.

#### 2.4 Project Reviews

The Cooperative Agreement requires scheduled times for formal project reviews. The number and timing of such reviews are to be included in the schedule baseline and appear on the Milestone Plan Log. The PON requested, at a minimum, consideration of the following reviews:

- (1) Phase 1 -- Two (2) reviews to be held at about the 40 percent and 90 percent design points. If design is partially or fully completed at the time of award, the project reviews will be adjusted accordingly.
- (2) Phase 2 -- Three (3) reviews to be held at about the 20 percent point, before start-up, and at the completion of Phase 2.
- (3) Phase 3 -- One (1) review. (The DOE preference is for quarterly operational reviews.)

The Cooperative Agreement provides for decision points (Continuation Application) at the conclusion of project budget periods. The schedules must include these decision points.

#### 3.0 Project Controls

Provide the project management information system for the project. It should be designed to provide a combination of organizational structures, procedures, programs (both manual and computer-oriented), and

proven industry techniques that focus the attention of project management on actual status and potential problems. These systems relate to cost, schedule, physical progress, and resource (man-hour) control. Separate functions and programs are needed that develop and maintain detailed status information and provide trends as compared against the defined baseline.

These project controls should cover, but not be limited to, the following as defined below:

- o Project Cost Control

This should provide the method by which the project cost estimate is input into the cost baseline as well as actual cost incurred to date.

- o Budget Control

This should include the project code of accounts which identifies each element of cost in the project cost estimate and in the cost control system.

- o Cost and Schedule Control

This should define how the budget control operates, and how man-hours and dollars are recorded and logged for comparison to estimated values. This should be defined to match the work breakdown structure.

- o Physical Progress Monitoring System

A physical progress monitoring system should be described which defines each task in the engineering, procurement, and construction scope of work in terms of physical goals that can easily be measured. The monitoring of engineering, procurement, and construction physical progress should be described using man-hours and dollars.

- Engineering Progress Monitoring

Engineering physical progress should be divided into three major categories: (1) preliminary design, (2) equipment selection, and (3) complete detail design. These major categories are further broken down into subcategories. Each subcategory is also weighted by plant area according to how much work (man-hours) is involved in that area. Progress is monitored according to actual units completed within each area.

- Procurement Progress Monitoring

Procurement physical progress should be maintained within three major categories, i.e., major equipment, major subcontracts, and commodities. These are maintained according to milestones, i.e., request for quotation, award of purchase orders, and delivery to the job site. Procurement progress is calculated in terms of percent of estimated dollar value completed.

- Construction Progress Monitoring

The progress measuring system should provide a means of objectively determining the status of the construction effort. The use of material quantities (a vessel, a cubic yard of concrete, a ton of structural steel) measured as installed in place compared to the estimated total quantities contained in the project control estimate will provide an objective percentage of progress toward a complete installation.

- o Project Baseline Control

The purpose of this item to acquire information which provides early warnings before any baseline change need occur. It is also the intent of this item, together with the monitoring plan, to provide DOE with such appropriate early warning information.

The Project Performer will initiate any changes in baselines. Any change of a baseline must be submitted to the DOE with the prior approval of the Participant. This section must describe the Participant's and the Project Performer's methodology to control baselines.

#### 4.0 Financial Control

The financial controls should identify the means by which the total project resource (funding) requirements and sources of these funds are managed. The objective of financial management is to provide for the acquisition and control of project funds. In order to achieve this objective, the activities of financial management should include the tracking and recording of all project financial commitments and expenditures. (This section should define the Participant's methodology to perform the financial management in addition to the DOE reporting requirements.)

##### 4.1 Financial Policy

Explain in detail the financial policy and controls.

##### 4.2 Accounting Procedure

Define how accounting for project costs will be performed. In addition, how detailed cost ledgers for each cost account are maintained.

#### 5.0 Engineering, Procurement, and Construction Controls

##### 5.1 Engineering

Detailed engineering design consists of the engineering efforts by each contractor to produce the technical documents required to support procurement activities for material and equipment and to provide construction forces with details for field construction. Both the content of these documents and their timely generation are important to avoid interruption in the procurement and construction activities they are intended to support.

The scope and description of the detailed engineering work for the project is as outlined in the Technical Baseline.

The Participant is responsible for ensuring the work performed is in accordance with the established technical baseline. Explain how the Project Performer's engineering personnel are responsible for the adherence to the project baselines, project design criteria and guidelines, and detailed engineering documents required for procurement and construction.

The following should define (at a minimum) in detail the engineering group's control methodology to execute the project.

- o Design Responsibility
- o Design Review Philosophy
- o Preliminary Engineering
- o Technical Documentation Review
- o Design Model Review (if applicable)
- o Engineering Progress Review
- o Technical Baseline Review
- o Engineering Review Meetings
- o Field Assistance
- o Start-Up/Shakedown Assistance
- o Operations Assistance
- o Engineering Ordering Schedule

## 5.2 Procurement

Procurement management for the project requires planning, control, and analyses to ensure that material and equipment are purchased and shipped according to schedule and within budget.

The following should explain in detail the procurement group's control methodology to execute the project (at a minimum).

- o Procurement Cycle

Explain, in detail, including levels of approval.



- o Master List

Describe this record of all engineered equipment/material items to be purchased for the project, sorted by the end-use, facility/area and then by equipment number and sequence.

### 5.3 Construction

Explain the responsibilities of the construction management team. This team must be formulated in such a manner that both the successful direction of construction activities and successful review and evaluation of construction progress will be accomplished. Describe your methodology and plans for (at a minimum):

- o Facilities Utilization.
- o Phase Planning.
- o Contractor/Subcontractor Interface.
- o Performance Review and Evaluation.
- o Subcontractor Performance Review and Evaluation (if applicable).
- o Manpower Requirements.
- o Construction Change Notice.
- o Drawings/Documentation Control.
- o Quality Assurance.

### 6.0 Environment, Safety, and Health Management Approach

The Participant is required to address the manner by which it will manage the ES&H aspects of the project. The Participant is the responsible party for compliance with all ES&H regulations at Federal, State, and Local levels. This responsibility is nontransferable.

The Participant should describe the approach required to:

- o Obtain all ES&H permits and approvals required for all phases of the project.
- o Conduct all ES&H compliance monitoring and any other ES&H monitoring which may be required by unanticipated circumstances.
- o Conduct the required ES&H data collection and analysis to support the project and permit requirements, including collection of baseline data.
- o Demonstrate compliance status with ES&H requirements as required.

- o Provide the ES&H plans and reports as specified in Attachment C (Federal Assistance Reporting Checklist) and Attachment A (Statement of Work).

#### 6.1 ES&H Organization

The Participant must provide a detailed organization chart with staffing to support the project ES&H needs.

#### 6.2 ES&H Controls

The Participant is required to define the method by which it will control the management and implementation of the ES&H activities.

#### 6.3 ES&H Schedule

The Participant must provide a schedule for compliance or achievement of the project ES&H requirements over the duration of the project life, including decommissioning. This should include the development and execution of a Compliance/Performance Test Plan, and all the requirements to execute this project in compliance with all applicable regulatory agencies.

### 7.0 Quality Assurance Program

#### 7.1 Introduction

The program should describe the Participant's objectives and general policies for quality assurance during the design, procurement, construction, operation, and termination of the project. The Participant has the responsibility for implementing the quality assurance program.

The purpose of this program is to ensure the proper execution of design, construction, and operation of the project to validate the demonstration:

- o Preventing failures which would endanger construction and operational personnel and the public, and to mitigate such failures should they occur.
- o Ensure that adequate change control procedures are used effectively.
- o Ensuring the plant is capable of operating with optimum design reliability.
- o Ensuring the environmental regulations are adhered to during construction and that when complete, the operating plant is capable of meeting the operational/environmental design criteria.
- o Serving as a tool for the cost-effective attainment of the preceding goals consistent with the project schedules.

This QA program will provide and explain the philosophy and policy of the project management and how this program interfaces with the participants, contractors, and subcontractors.

This QA program will provide a schedule as to when the Project Performer's detailed QA plan will be submitted and when the QA plans of all contractors will be submitted, and provide at that time a complete list of all standards, specifications, and procedures applicable to these QA plans.

## 8.0 Precommissioning, Shakedown, and Start-Up Test Controls

### 8.1 Introduction

During the final phases of plant construction and the initial phases of operational testing, components and systems must be completed and turned over to operations in an orderly and well-coordinated manner.

To provide successful management which will accomplish this task, a systems approach should be implemented at a point when the construction progress is approximately 70 percent complete. The systems boundaries are to be established on systems test diagrams and/or marked-up piping and instrumentation drawings (P&ID). These boundaries will be established and a schedule will be generated jointly by construction and operations, detailing the time frame for completion of each system.

A plan is needed whereby the emphasis of job site scheduling is shifted from completion of geographic work areas to the operational systems concept, but without unduly restricting the overall performance of the construction.

### 8.2 Construction/Operation Interface

Explain the interface between construction, engineering, and operations, emphasizing any interaction between participants.

### 8.3 Precommissioning/Commissioning

- o Organization -- Explain and chart the commissioning/start-up organization.
- o Schedule -- Provide a schedule for precommissioning/commissioning on an area-by-area basis.

### 8.4 Numbered Test Control System

A detailed numbered test control system must be in place to provide an orderly testing and turnover of equipment and system. This system should address, at a minimum, the following:

- o Test system.
- o Test number.

- o Operational system.
- o Test definition.
- o Pre-test punch list.
- o Post-test punch list.
- o Applicable procedures.
- o Acceptance criteria.
- o Exceptions list.
- o Turnover authorization.

#### 8.5 Precommissioning Testing

Define the extent of testing and the approach to be used.

#### 8.6 System Turnover Review and Evaluation

Explain the system employed including acceptance criteria.

#### 8.7 Test Procedures

List all codes, standards, procedures, and specifications used in testing. Include, by reference, all special prepared procedures.

#### 8.8 Start-Up Test Plan

Show when and how a detailed start-up test plan will be provided by area or section to orderly initiate plant operations.

#### 8.9 Acceptance Criteria

Show when and how the Participant will define in detail the equipment, system, and plant acceptance criteria to establish that the plant (facility) is "operational to commence testing."

### 9.0 Operating Procedures

#### 9.1 Operational Testing Philosophy

Explain approach and duration.

#### 9.2 Operating Organization

Explain and provide an organization chart including all participants and consultant interfaces.

### 9.3 Development of Plant Policies, Operating Manuals, and Procedures

Policies which are specific to the activities required to operate, maintain, and administer the total plant must be prepared and organized in manuals for easy access during the planning and start-up phase. This requires that the existing philosophy for operation, maintenance, shutdowns, and turnarounds be refined and carefully spelled out in documents to form the basis for plant policies.

Explain how and when the Participant will prepare Supervisory Operating Manuals for each plant area or system. These Supervisory Operating Manuals will contain at a minimum:

- o Preface.
- o Equipment/plant area specifications.
- o Operating variables and control.
- o Special equipment.
- o Safety.
- o Start-up procedures.
- o Shutdown procedures.
- o Special procedures.

An Appendix will contain PFD's, PID's, data sheets, and other pertinent documents to fully describe the plant area.

The Supervisory Operating Manuals should provide the basis for the preparation of detailed operating instructions.

(These Supervisory Manuals are to be available to DOE.)

The Project Participant should prepare and implement general plant procedures for at least the following areas:

- o Industrial relations.
- o Plant security and safety.
- o Fire protection.
- o Plant housekeeping standards.
- o Maintenance Activities.
- o Material/Chemical Management.
- o Plant Operations Training.
- o Maintenance Training.

- o Technical Service Interface.
- o Laboratory Service.
- o Inspection.
- o Plant Engineering.
- o Plant Production Goals.
- o Operation Acceptance Criteria.

## PART B: CODE OF ACCOUNTS AND WORK BREAKDOWN STRUCTURE

### 1.0 Introduction

The Project Participant's Work Breakdown Structure is to be a comprehensive coding system which organizes the Project into detailed activities for the purpose of measuring the status of cost and schedule progress against the established Project baselines. The "Code of Accounts" should be representative of the Proposer's system for identifying all capital plant and commodities (both tangible and intangible), home office services, field labor (direct and indirect), and field services for the whole Project.

### 2.0 Code of Accounts and Work Breakdown Structure

Provide detailed Code of Accounts and WBS for all phases of the Project area by area, grouping by grouping, and to the detail indicated in 1.0.

### 3.0 Management Responsibility

Provide the relationship to the Code of Accounts and WBS for the Project Participant's management staff. (Provide a list.)

## PART C: TECHNICAL BASELINE

### 1.0 Introduction

The technical baseline contained in this section of the management plan includes the engineering descriptions, specifications, design parameters, capacities, and equipment sizes for the entire facility.

The engineering descriptions of the plant, equipment sizing, process flow drawings, stream flow rates, temperature, and pressures described in plant areas (number\*) through area (number\*) are incorporated in the baselines by reference to specific engineering documents such as engineering drawings, process flow drawings, and data sheets.

The technical baseline is the definitive scope of the entire facility and is the basis for preparing the schedules cost baseline and budgets. The work breakdown structure ties the cost plan to the technical baseline that incorporates the basic engineering by reference to engineering documents such as plot plans, process flow drawings, and data sheets.

This document and all included engineering drawings, flow sheets, data sheets, and, etc., for the entire facility shall properly identify proprietary information.

### 2.0 Design Descriptions

The following sections should delineate all design parameters for the entire facility. This should be done to the greatest detail available at this time. This document will be updated as the design evolves and more detail becomes available.

- o Description of project.
- o Location and description of site.
- o Area geology.
- o ES&H considerations.

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\* Plant numbering system for the selected project.

- o Supplied utilities.
- o On-site utilities.
- o Process description for each plant area.
- o Equipment lists for each plant area.



### 3.0 Principal Plant Operating Parameters

Principal plant operating parameters are to be provided on a stream and area basis for the entire plant. This includes the on-stream factor and equipment sparing philosophy. In addition, the following parameters are required:

- o Flow rates, pressures, temperatures, and compositions.
- o Feedstocks, products, and by-products.
- o Gaseous, liquid, and solid emissions.

### 4.0 Overall Material and Energy Balance

- o Area by area for the entire plant on a major stream basis.

### 5.0 Plant Systems and Facilities List

Provide a list, number and nomenclature, for each plant area and building for:

- o Major plant areas.
- o Buildings.
- o Off-site facilities.
- o Plot plans showing areas, systems, and major buildings.

### 6.0 Plant Control System Design

Explain overall plant control systems for each plant area and describe data acquisition capabilities and approach.

### 7.0 Plant Maintenance

Explain how the Project Performer will handle site and system maintenance in relation to:

- o Availability of existing off-site job shops.
- o Transportation.
- o Weather.
- o Equipment sparing.
- o Contract maintenance.
- o On-site maintenance staffing and facilities.

## 8.0 Proprietary Information

All proprietary information shall be marked as required by the Cooperative Agreement and incorporated in a separate Appendix.

## PART D: COST/SCHEDULE BASELINES

### 1.0 Introduction

This section contains the project cost and schedule baselines for engineering, procurement, construction, operation, and termination of the project.

### 2.0 Project Spending Plan

The Project Spending Plan submitted as part of the Cooperative Agreement negotiations will be included here, after negotiation.

### 3.0 Master Schedule, Milestone Plan, and Log

These are schedule baselines for the project which contain the key and control milestones. The schedule should be cross-referenced to the work breakdown structure. It is the primary tool for control of all project activities and planning including budgets, critical milestone definition, and progress monitoring.

The permit schedule is prepared from information contained in any engineering, procurement, construction (EPC) network. This network is interfaced with the process start-up schedule in order to obtain necessary operating permits ahead of plant start-up. The construction schedules provide necessary data for timing on permit requirements for construction, turnover, operation, and termination. Milestones shown on the EPC schedules are the interface points with environmental control network.

- o Master EPC summary schedule.

- Phase I. (Details)
  - Phase II. (Details)
  - Phase III. (Details)

- o Critical milestones (list).

- o Control milestones (list).

- o Milestone schedule.